

355	360	365
Leu Cys Pro Met Arg Gln	Pro Thr Arg Ile Lys	Phe Cys Asn His Ile
370	375	380
Arg Thr Phe Ala Val Val	Ile Leu Ile Asn His	Phe Phe Gln Ile Leu
385	390	395
Asn Ile Thr Phe Ala Ile	Arg Arg Arg Gln Ser	Ser Arg Ser Ser Pro
405	410	415
Thr Leu Lys Lys Pro Thr	Ala Ile Arg Ser Lys	Gln Arg Tyr Ile Lys
420	425	430
Ser Cys Ile Ser Gln Leu	Leu Leu Asp Phe Ser	Ile Val Ser Ala Met
435	440	445
Phe Phe Gln Arg Tyr Ile	Leu Thr Leu Gly Asn	Val
450	455	460

<210> 8314  
 <211> 224  
 <212> PRT  
 <213> B.fragilis

<400> 8314
Lys Gln Asn Glu Val Thr Met Asn Asn Gln Ile Gln His Lys Asp Ser
1 5 10 15
Thr Lys Val Pro Glu Pro Thr Leu Arg Leu Pro Trp Tyr Leu Ser
20 25 30
Asn Val Lys Leu Leu Lys Gln Lys Gly Glu Arg Tyr Val Ser Ser Thr
35 40 45
Gln Ile Ser Lys Glu Ile Asn Ile Asp Ala Ser Gln Ile Ala Lys Asp
50 55 60
Leu Ser Tyr Val Asn Ile Ser Gly Arg Thr Arg Val Gly Tyr Glu Val
65 70 75 80
Asp Ala Leu Ile Ala Val Leu Glu Asp Phe Leu Gly Phe Thr Asn Met
85 90 95
His Lys Ala Phe Leu Phe Gly Val Gly Ser Leu Gly Gly Ala Leu Leu
100 105 110
Arg Asp Ser Gly Leu Ser His Phe Gly Leu Glu Ile Val Ala Ala Phe
115 120 125
Asp Val Asn Pro Ser Leu Val Gly Thr Thr Leu Asn Gly Ile Pro Ile
130 135 140
Phe His Ser Asp Asp Phe Gln Lys Lys Met Gln Glu Tyr Gly Val His
145 150 155 160
Ile Gly Val Leu Thr Val Pro Ile Glu Ile Ala Gln Cys Ile Thr Asp
165 170 175
Thr Met Val Ala Gly Gly Ile Lys Ala Val Trp Asn Phe Thr Pro Phe
180 185 190
Arg Ile Arg Val Pro Glu Asp Ile Val Val Gln Asn Thr Ser Leu Tyr
195 200 205
Ala His Leu Ala Val Met Phe Asn Arg Leu Asn Phe Asn Glu Ile Glu
210 215 220

<210> 8315  
 <211> 290  
 <212> PRT  
 <213> B.fragilis

<400> 8315
Glu Asp Ser Asp Met Ala Asn Pro Lys Leu Pro Gly Ile Pro Glu Ala
1 5 10 15
Glu Gln Ala Leu Leu Tyr Ala Lys Leu Asn Glu Tyr Asn Arg Gly Arg
20 25 30

Met Ser Tyr Lys Glu Ala Gly Ala Tyr Phe Val Val Leu Pro Arg Pro  
 35 40 45  
 Gly His Pro Thr Tyr Ser Val Trp Ile Tyr Ser Pro Thr Leu Glu Lys  
 50 55 60  
 Asn Arg Leu Leu Phe Ile His Glu Leu Ser Ala Asp Ile Asn Glu Ser  
 65 70 75 80  
 Leu Arg Met Ala Ser Thr Leu Phe Phe Phe Ser Arg Arg Cys Leu Leu  
 85 90 95  
 Ile Val Glu Tyr Asn Glu Lys Arg Met Gln Ser Asn Gly Asp Asp Ile  
 100 105 110  
 Ile Ser Phe Gly Arg Tyr Arg Gly His Tyr Leu His Glu Ile Leu Lys  
 115 120 125  
 Val Asp Pro Ala Tyr Leu Ser Trp Ile Ala Tyr Lys Tyr Thr Pro Lys  
 130 135 140  
 Ile Pro Lys Gln Glu Arg Phe Val Ala Ile Ala Gln Val Tyr His Ser  
 145 150 155 160  
 Val His Leu Asp Ile Met Gln Arg Lys Ala Arg Gln Lys Arg Glu Ala  
 165 170 175  
 Gly Arg Phe Leu Gly Asn Glu Gly Glu Lys Leu Glu Gly Leu Asn Leu  
 180 185 190  
 Lys Val Val Arg Val Arg Leu Glu Asp Asp Pro Tyr Lys Thr Arg Val  
 195 200 205  
 Met Gly Thr Ser Val Gln Phe Val Arg Gln Ile Val Thr Leu Thr  
 210 215 220  
 Asp Pro Ser Gly Asn Leu Val Val Leu Arg Ile Ser Ser Lys Thr Pro  
 225 230 235 240  
 Ser Pro Val Ser Cys Gln Leu Pro Ala Leu Glu His Glu Val Arg Pro  
 245 250 255  
 Gly Glu Ile Val His Ile Ala Ser Ala Arg Ile Ala Arg Thr Tyr Glu  
 260 265 270  
 Ser Tyr Gly Ser Lys Tyr Thr Arg Leu Ser His Val Lys Phe Leu Ile  
 275 280 285  
 Gly Thr  
 290

<210> 8316  
 <211> 166  
 <212> PRT  
 <213> B.fragilis

<400> 8316

Asn Arg Thr Asp Met Lys Lys Leu Tyr Phe Phe Thr Met Leu Ala Ala  
 1 5 10 15  
 Met Leu Phe Ala Val Thr Asn Val Met Ala Gln Lys Ala Asn Phe Lys  
 20 25 30  
 Pro Ala Asn Leu Lys Gly Ile Trp Gln Leu Cys His Tyr Val Ser Glu  
 35 40 45  
 Ser Pro Asp Ala Pro Gly Val Leu Lys Pro Ser Asn Thr Phe Lys Val  
 50 55 60  
 Leu Ser Asp Asp Gly Arg Ile Val Asn Phe Thr Ile Arg Pro Gly Ala  
 65 70 75 80  
 Asp Ala Ile Ile Thr Gly Tyr Gly Ser Tyr Glu Gln Leu Ser Asp His  
 85 90 95  
 Thr Tyr Ala Glu Ser Ile Glu Lys Asn Ile His Leu Pro Met Leu Asp  
 100 105 110  
 Asn Gln Asp Asn Val Leu Thr Phe Glu Leu Val Asp Asp Lys Val Leu  
 115 120 125  
 His Leu Lys Tyr Phe Ile Glu Lys Asp Leu Asn Gly Asn Glu Leu Asn  
 130 135 140



Cys Trp Tyr Lys Glu Thr Trp Lys Arg Ile Glu Met Pro Asp Lys Phe  
 145 150 155 160  
 Pro Glu Asp Ile Val Arg  
 165

<210> 8317  
 <211> 411  
 <212> PRT  
 <213> B.fragilis

<400> 8317

Asp Met Gln Asp Thr Leu Ser Leu Tyr Glu Leu Asn Ala Leu Val Arg  
 1 5 10 15  
 Arg Ser Leu Glu Gln Cys Leu Pro Asp Glu Tyr Trp Val Gln Ala Glu  
 20 25 30  
 Leu Ser Asp Val Arg Thr Asn Ser Thr Gly His Cys Tyr Leu Glu Phe  
 35 40 45  
 Val Gln Lys Asp Pro Arg Ser Asn Asn Leu Ile Ala Lys Ala Arg Gly  
 50 55 60  
 Thr Ile Trp Ala Asn Ile Tyr Arg Leu Leu Lys Pro Tyr Phe Glu Glu  
 65 70 75 80  
 Ser Thr Gly Gln Leu Phe Thr Ser Gly Ile Lys Val Leu Val Lys Val  
 85 90 95  
 Thr Val Ala Phe His Glu Leu Tyr Gly Tyr Ser Leu Thr Val Gln Asp  
 100 105 110  
 Ile Asp Pro Thr Tyr Thr Leu Gly Asp Met Ala Arg Arg Arg Glu  
 115 120 125  
 Ile Leu Arg Gln Leu Glu Glu Glu Gly Val Leu Thr Leu Asn Lys Glu  
 130 135 140  
 Leu Glu Met Pro Leu Leu Pro Gln Arg Ile Ala Val Ile Ser Ser Ala  
 145 150 155 160  
 Thr Ala Ala Gly Tyr Gly Asp Phe Cys His Gln Leu Gln His Asn Pro  
 165 170 175  
 Arg Gly Phe Tyr Phe Arg Thr Glu Leu Phe Pro Ala Leu Met Gln Gly  
 180 185 190  
 Asn Gln Val Glu Glu Ser Val Leu Ala Ala Leu Asp Ala Val Asn Ala  
 195 200 205  
 Arg Val Asp Glu Phe Asp Val Val Val Ile Ile Arg Gly Gly Gly Ala  
 210 215 220  
 Thr Ser Asp Leu Ser Gly Phe Asp Thr Tyr Leu Leu Ala Ala Ala Cys  
 225 230 235 240  
 Ala Gln Phe Pro Leu Pro Val Ile Thr Gly Ile Gly His Glu Arg Asp  
 245 250 255  
 Asp Thr Val Leu Asp Ser Val Ala His Thr Arg Val Lys Thr Pro Thr  
 260 265 270  
 Ala Ala Ala Glu Leu Leu Ile Asp Arg Met Glu Glu Ala Ala Asp Arg  
 275 280 285  
 Leu Gly Ala Leu Ala Glu Glu Leu His Thr Arg Val Phe Tyr Arg Leu  
 290 295 300  
 Glu Gln Glu Arg Arg Arg Leu Ala Leu Leu Gln Ala Arg Ile Pro Ser  
 305 310 315 320  
 Gln Val Met Arg Lys Leu Ser Glu Ser Arg Ile Lys Leu Gln Met Ala  
 325 330 335  
 Lys Ser Asn Leu Ser His Ala Ala Glu Thr Leu Leu Ala Arg Gln His  
 340 345 350  
 His Arg Leu Glu Leu Leu Gln Asn Arg Ile Ala Asp Ala Ser Pro Gln  
 355 360 365  
 Lys Leu Leu Lys Arg Gly Tyr Ser Ile Thr Leu Lys Asp Gly Lys Ala  
 370 375 380

Val Lys Ser Ala Ala Cys Leu Gln Ser Gly Asp Glu Leu Ile Thr Arg  
 385 390 395 400  
 Leu Tyr Lys Gly Glu Val Lys Ser Arg Val Glu  
 405 410

<210> 8318  
 <211> 335  
 <212> PRT  
 <213> B.fragilis

<400> 8318

Asn Ile Lys Asp Ile Met Ala Val Thr Met Ala Asp Ile Thr Lys Leu  
 1 5 10 15  
 Arg Lys Met Thr Gly Ala Gly Met Met Asp Cys Lys Asn Ala Leu Thr  
 20 25 30  
 Asp Ala Glu Gly Asp Phe Asp Lys Ala Met Lys Ile Ile Arg Glu Lys  
 35 40 45  
 Gly Gln Ala Val Ala Ala Lys Arg Ser Asp Arg Glu Ala Ser Glu Gly  
 50 55 60  
 Cys Val Leu Val Lys Val Glu Glu Gly Phe Gly Ala Ile Ile Ala Leu  
 65 70 75 80  
 Lys Cys Glu Thr Asp Phe Val Ala Gln Asn Ala Asp Phe Val Lys Leu  
 85 90 95  
 Thr Gln Asp Ile Leu Asp Ala Ala Val Ala Asn Lys Cys Lys Thr Leu  
 100 105 110  
 Glu Glu Val Leu Ala Leu Pro Met Gly Asp Ala Thr Val Ala Gln Ala  
 115 120 125  
 Val Thr Asp Arg Thr Gly Ile Thr Gly Glu Lys Met Glu Leu Asp Gly  
 130 135 140  
 Tyr Met Val Leu Glu Gly Ala Thr Ile Ala Ala Tyr Asn His Met Asn  
 145 150 155 160  
 Arg Asn Gly Leu Cys Thr Met Val Ala Phe Asn Lys Lys Val Asp Glu  
 165 170 175  
 Gln Leu Ala Lys Gln Val Ala Met Gln Val Ala Ala Met Asn Pro Ile  
 180 185 190  
 Ala Val Asp Glu Asp Gly Val Ser Glu Glu Val Lys Gln Lys Glu Ile  
 195 200 205  
 Glu Val Ala Val Glu Lys Thr Lys Val Glu Gln Val Gln Lys Ala Val  
 210 215 220  
 Glu Ala Ala Leu Lys Lys Ala Asn Ile Asn Pro Ala His Val Asp Ser  
 225 230 235 240  
 Glu Asp His Met Glu Ser Asn Met Ala Lys Gly Trp Ile Thr Ala Glu  
 245 250 255  
 Asp Val Ala Lys Ala Lys Glu Ile Ile Ala Thr Val Ser Ala Glu Lys  
 260 265 270  
 Ala Ala Asn Met Pro Glu Gln Met Ile Gln Asn Ile Ala Lys Gly Arg  
 275 280 285  
 Leu Ala Lys Phe Leu Lys Glu Val Cys Leu Leu Asn Gln Glu Asp Ile  
 290 295 300  
 Met Asp Ala Lys Lys Ile Val Arg Glu Val Leu Lys Glu Ala Asp Pro  
 305 310 315 320  
 Glu Leu Lys Val Val Asp Phe Lys Arg Phe Thr Leu Arg Ala Glu  
 325 330 335

<210> 8319  
 <211> 272  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8319

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Arg Tyr Gly Glu Ser Tyr Ser Thr Gly Tyr Lys Gln Asp Phe Thr Ile
1      5      10      15
Thr Ile Phe Lys Lys Glu Ile Met Lys Pro Phe Ile Ser Phe Cys Leu
20      25      30
Leu Leu Cys Ile Cys Leu Gly Lys Leu Tyr Ala Gln Gly Val Asn Ile
35      40      45
Val Tyr Ile Gly Asn Ser Ile Thr Gln Gly Ala Leu Leu Lys Thr Pro
50      55      60
Ala Thr Glu Ala Pro Pro Val Gln Ala Ser Gln Tyr Ile Glu Gln Ala
65      70      75      80
Thr Lys Gln Ser Val Ala Phe Arg Asn Cys Gly Val Ser Gly Ala Thr
85      90      95
Thr Leu Asn Phe Leu Pro Ile Ala Glu Arg Gln Phe Pro Asn Val Lys
100     105     110
Ser Ala Ala Gln Glu Leu Ser Gln Arg Lys Gly Thr Leu Leu Phe Ser
115     120     125
Ile Met Leu Gly Thr Asn Asp Ser Ala Cys Asn Gly Pro Phe Gly Ser
130     135     140
Pro Val Glu Pro Val Ser Tyr Tyr Thr Asn Met Lys Thr Ile Ile Asp
145     150     155     160
Glu Leu Leu Ser Leu Tyr Pro Glu Cys Lys Val Val Ile His Gln Pro
165     170     175
Ile Trp Tyr Ser Pro Asn Thr Tyr Asn Ser Ala Met Tyr Leu Ala Ala
180     185     190
Gly Leu Lys Arg Leu Lys Ser Tyr Thr Pro Met Ile His Lys Leu Val
195     200     205
Asp His Tyr Ser Gln Ala Asn Pro Asn Gln Val Phe Leu Gly Asp Thr
210     215     220
Ala Ala Ser Asp Phe Phe Arg Asn Asn Tyr Gln Ser Tyr Phe Thr Pro
225     230     235     240
Glu Asn Gly Asn Ala Gly Thr Phe Tyr Leu His Pro Asn Lys Glu Gly
245     250     255
Ala Gly Ile Leu Gly Lys Tyr Trp Ala Glu Ala Ile Leu Lys Ala Ile
260     265     270

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&lt;210&gt; 8320

&lt;211&gt; 130

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8320

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Asp Ile Met Glu Val Val Asn Ala Leu Gly Arg Arg Lys Arg Ala Ile
1      5      10      15
Ala Arg Val Phe Val Ser Glu Gly Thr Gly Lys Ile Thr Ile Asn Lys
20      25      30
Arg Asp Leu Ala Glu Tyr Phe Pro Ser Thr Ile Leu Gln Tyr Val Val
35      40      45
Lys Gln Pro Leu Asn Lys Leu Gly Val Ala Glu Lys Tyr Asp Ile Lys
50      55      60
Val Asn Leu Cys Gly Gly Gly Phe Thr Gly Gln Ser Gln Ala Leu Arg
65      70      75      80
Leu Ala Ile Ala Arg Ala Leu Val Lys Ile Asn Ala Glu Asp Lys Pro
85      90      95
Ala Leu Arg Ser Glu Gly Phe Met Thr Arg Asp Pro Arg Ser Val Glu
100     105     110
Arg Lys Lys Pro Gly Gln Pro Lys Ala Arg Arg Arg Phe Gln Phe Ser
115     120     125
Lys Arg

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130

<210> 8321  
 <211> 98  
 <212> PRT  
 <213> B.fragilis

<400> 8321

Met	Leu	Leu	Leu	Lys	Ile	Phe	Phe	Thr	Thr	Tyr	Gln	Pro	Ser	Pro	Asp
1				5					10					15	
Lys	Gly	Arg	Leu	Thr	Cys	Tyr	Glu	Leu	Ile	Ser	Tyr	Pro	Phe	Glu	Ile
			20					25					30		
Ile	Ile	Gly	Leu	Gln	Lys	Tyr	Gly	Phe	Ser	Leu	Asn	Trp	Gln	Thr	Ile
		35					40					45			
Ser	Val	Phe	Phe	Trp	Ile	Tyr	Pro	Val	Asp	Asn	Glu	Pro	Gln	Ala	Ile
	50					55					60				
Cys	Arg	Lys	Gln	Arg	Pro	Thr	Arg	Gln	Lys	Lys	Thr	Ala	Gly	Asn	Lys
65					70					75					80
Pro	His	Thr	Ile	Asn	Ala	Thr	Ile	His	Asn	Arg	Gln	Leu	Ala	Thr	Cys
				85					90					95	
Ser	Pro														

<210> 8322  
 <211> 81  
 <212> PRT  
 <213> B.fragilis

<400> 8322

Ile	Tyr	Thr	Cys	Val	Ser	Leu	Arg	Lys	Cys	Arg	Glu	Glu	Phe	Gly	Asp
1				5					10					15	
Cys	Ile	His	Arg	Phe	Pro	Ile	Val	Leu	Leu	Leu	Leu	Val	Thr	Ala	Phe
			20					25					30		
Arg	Ala	Gln	Lys	Val	Ile	Lys	Val	Gly	Val	Trp	Val	Thr	Ala	Pro	Phe
		35					40					45			
Leu	Arg	Ile	Gly	Lys	Pro	Gly	Val	Met	Glu	Arg	Glu	Asn	Ser	Ala	Phe
	50					55					60				
Lys	Asp	Gly	Lys	Pro	Gly	Ser	Gly	Gly	Gly	Arg	Ala	Gly	Leu	Trp	Gly
65					70					75					80
Lys															

<210> 8323  
 <211> 400  
 <212> PRT  
 <213> B.fragilis

<400> 8323

His	Glu	Val	Cys	Tyr	Ala	Pro	Cys	Ser	Phe	Lys	Val	Cys	Ile	Leu	Thr
1				5					10					15	
Cys	Pro	Ile	Asp	Cys	Ile	Leu	Pro	Gly	Ile	Leu	Tyr	Ile	Cys	Ile	Leu
			20					25					30		
Arg	Lys	Lys	Arg	Met	Asn	Met	Lys	Glu	Ser	Lys	Lys	Arg	Val	Leu	Val
		35					40					45			
Gly	Met	Ser	Gly	Gly	Ile	Asp	Ser	Thr	Ala	Thr	Cys	Leu	Met	Leu	Gln
	50					55					60				
Glu	Gln	Gly	Tyr	Glu	Ile	Val	Gly	Val	Thr	Met	Arg	Val	Trp	Gly	Asp
65					70					75					80
Glu	Pro	Gln	Asp	Ala	Arg	Glu	Leu	Ala	Ala	Arg	Met	Gly	Ile	Glu	His

				85					90					95	
Tyr	Val	Ala	Asp	Glu	Arg	Val	Pro	Phe	Lys	Asp	Thr	Ile	Val	Lys	Asn
			100					105					110		
Phe	Ile	Asp	Glu	Tyr	Arg	Gln	Gly	Arg	Thr	Pro	Asn	Pro	Cys	Val	Met
		115					120					125			
Cys	Asn	Pro	Leu	Phe	Lys	Phe	Arg	Met	Leu	Ile	Glu	Trp	Ala	Asp	Lys
	130					135					140				
Leu	Gly	Cys	Asp	Trp	Ile	Ala	Thr	Gly	His	Tyr	Ser	Arg	Leu	Glu	Glu
145					150					155					160
Arg	Asn	Gly	His	Ile	Tyr	Ile	Val	Ala	Gly	Asp	Asp	Asp	Lys	Lys	Asp
			165						170					175	
Gln	Ser	Tyr	Phe	Leu	Trp	Arg	Leu	Gly	Gln	Asp	Val	Leu	Arg	Arg	Cys
			180					185					190		
Ile	Phe	Pro	Leu	Gly	Asn	Tyr	Thr	Lys	Gln	Thr	Val	Arg	Asp	Tyr	Leu
		195					200					205			
Arg	Glu	Lys	Gly	Tyr	Glu	Ala	Lys	Ser	Lys	Glu	Gly	Glu	Ser	Met	Glu
	210					215					220				
Val	Cys	Phe	Ile	Lys	Gly	Asp	Tyr	Arg	Asp	Phe	Leu	Arg	Glu	Gln	Cys
225					230				235						240
Pro	Glu	Leu	Asp	Ala	Glu	Val	Gly	Pro	Gly	Trp	Phe	Val	Ser	Ser	Glu
				245				250						255	
Gly	Val	Lys	Leu	Gly	Gln	His	Lys	Gly	Phe	Pro	Tyr	Tyr	Thr	Ile	Gly
		260					265						270		
Gln	Arg	Lys	Gly	Leu	Glu	Ile	Ala	Leu	Gly	Lys	Pro	Ala	Tyr	Val	Leu
		275					280					285			
Lys	Ile	Asn	Pro	Gln	Lys	Asn	Thr	Val	Met	Leu	Gly	Asp	Ala	Gly	Gln
	290					295					300				
Leu	Arg	Ala	Glu	Tyr	Met	Val	Ala	Glu	Gln	Asp	Asn	Ile	Val	Asp	Glu
305					310				315						320
Asp	Glu	Leu	Phe	Ala	Cys	Pro	Asp	Leu	Ala	Val	Arg	Ile	Arg	Tyr	Arg
			325				330						335		
Ser	Arg	Pro	Ile	Pro	Cys	Arg	Val	Lys	Arg	Leu	Glu	Asp	Gly	Arg	Leu
		340					345					350			
Leu	Val	Arg	Phe	Leu	Ala	Glu	Ala	Ser	Ala	Ile	Ala	Pro	Gly	Gln	Ser
	355					360					365				
Ala	Val	Phe	Tyr	Glu	Gly	Arg	Arg	Val	Leu	Gly	Gly	Ala	Phe	Ile	Ala
	370					375				380					
Ser	Gln	Arg	Gly	Ile	Gly	Leu	Val	Ile	Glu	Gln	Asn	Lys	Asp	Trp	Lys
385				390					395						400

<210> 8324  
 <211> 68  
 <212> PRT  
 <213> B.fragilis

<400> 8324  
 Gln Thr Ser Cys His Gly Asn Val Ser Tyr Ile Ser Met Asn Arg Thr  
 1 5 10 15  
 Leu Val Glu Arg Cys Phe Cys Leu Ser Val Asn Leu Ile Ser Glu Pro  
 20 25 30  
 Pro Tyr Ile Ser Val Phe Arg Ala Asp Gly Lys Leu Arg Lys Lys Lys  
 35 40 45  
 Arg Pro Thr Arg Asn Gln Pro Ile Ile Leu Leu Ala Ala Asn Arg Thr  
 50 55 60  
 Ile Thr Ile Gln  
 65

<210> 8325  
 <211> 337

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8325

Tyr Asn Ile Arg Ile Glu Gly Met Lys Val Ser Phe Ser Met Ile Phe  
 1 5 10 15  
 Glu Lys Ala Thr Asp Pro Phe Ile Lys Ser Val Ile Lys Ala Ala Glu  
 20 25 30  
 Thr Ala Ile Leu Ser His Val Gly Lys Glu Val Glu Ile Val Gly Asn  
 35 40 45  
 Ile Ser Val Lys Thr Val Gln Ala Ala Arg Pro Glu Val Gly Lys Leu  
 50 55 60  
 Leu Pro His Val Lys Asn Ile Ile Gly Ile Ser Ser Gly Lys Gly Gly  
 65 70 75 80  
 Val Gly Lys Ser Thr Val Ser Ala Asn Leu Ala Val Ala Leu Ala Lys  
 85 90 95  
 Leu Gly Tyr Lys Val Gly Leu Leu Asp Ala Asp Val Phe Gly Pro Ser  
 100 105 110  
 Met Pro Lys Met Phe Gln Val Glu Asp Ala Arg Pro Tyr Ala Glu Lys  
 115 120 125  
 Ile Asp Gly Arg Asp Met Ile Ile Pro Val Glu Lys Tyr Gly Val Lys  
 130 135 140  
 Leu Leu Ser Ile Gly Phe Phe Val Asp Pro Asp Gln Ala Thr Leu Trp  
 145 150 155 160  
 Arg Gly Gly Met Ala Ser Asn Ala Leu Lys Gln Leu Ile Gly Asp Ala  
 165 170 175  
 Ala Trp Gly Asp Leu Asp Tyr Phe Leu Ile Asp Leu Pro Pro Gly Thr  
 180 185 190  
 Ser Asp Ile His Leu Thr Val Val Gln Thr Leu Ala Leu Thr Gly Ala  
 195 200 205  
 Val Val Val Ser Thr Pro Gln Ala Val Ala Leu Ala Asp Ala Arg Lys  
 210 215 220  
 Gly Ile Asn Met Phe Thr Asn Asp Lys Val Asn Val Pro Ile Leu Gly  
 225 230 235 240  
 Leu Val Glu Asn Met Ala Trp Phe Thr Pro Ala Glu Leu Pro Glu Asn  
 245 250 255  
 Lys Tyr Tyr Leu Phe Gly Lys Glu Gly Ala Lys Lys Leu Ala Glu Glu  
 260 265 270  
 Met Asn Val Pro Leu Leu Gly Gln Ile Pro Ile Val Gln Ser Ile Cys  
 275 280 285  
 Glu Gly Gly Asp Lys Gly Thr Pro Val Ala Leu Asp Glu Asn Thr Val  
 290 295 300  
 Thr Gly Arg Ala Phe Leu Ala Leu Ala Ala Ser Val Val Arg Gln Val  
 305 310 315 320  
 Asp Lys Arg Asn Val Glu Met Ala Pro Thr Lys Ile Val Glu Leu His  
 325 330 335  
 Lys

&lt;210&gt; 8326

&lt;211&gt; 861

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8326

Leu Lys Asn Arg Lys Thr Met Asn Trp Gly Ile His Asp Arg Arg Gly  
 1 5 10 15  
 Trp Met Ala Val Val Leu Leu Leu Cys Ala Tyr Pro Phe Ser Ala Gln  
 20 25 30

Asn Thr Gly Gln Ile Thr Leu Glu Leu Arg Asn Lys Pro Leu Pro Ala  
 35 40 45  
 Val Leu Lys Leu Ile Glu Lys Ala Gly Glu Lys His Ile Ile Phe Ser  
 50 55 60  
 Tyr Asn Glu Thr Glu Thr Tyr His Val Thr Ala Ser Ile His Gln Arg  
 65 70 75 80  
 Asn Glu Ser Glu Ala Leu Ser Ile Val Leu Lys Ser Thr Pro Phe Ile  
 85 90 95  
 Tyr Lys Glu Arg Glu Asn Tyr Phe Val Ile Gln Lys Gly Ser Ile Asp  
 100 105 110  
 Lys Arg Leu Ile Thr Ile Arg Gly Ser Val Ile Asp Glu Asn Asn Glu  
 115 120 125  
 Pro Leu Val Cys Ala Asn Val Leu Leu Leu Asp Lys Ala Asp Ser Ala  
 130 135 140  
 Phe Val Asn Gly Val Val Thr Asn Gln Asp Gly Ser Phe Arg Ile Pro  
 145 150 155 160  
 Gly Glu Glu Gly Arg Asp Tyr Leu Leu Lys Thr Ser Tyr Ile Gly Tyr  
 165 170 175  
 Gln Thr Lys Ile Gln Pro Cys Gly Ala Met Asn Lys Val Cys Leu Phe  
 180 185 190  
 Ser Asp Thr Gln Leu Met Lys Glu Val Val Ile Ser Val Asp His Pro  
 195 200 205  
 Leu Ile Val His Lys Asp Asn Gly Leu Leu Ala Asn Val Val Gly Thr  
 210 215 220  
 Pro Leu Ala Lys Met Gly Ser Ala Ala Glu Met Ile Ser His Leu Pro  
 225 230 235 240  
 Phe Val Thr Gly Gly Val Gly Glu Tyr Met Val Leu Gly His Gly Val  
 245 250 255  
 Pro Val Ile Tyr Ile Asn Gly Arg Lys Ile Arg Asp Gln Gly Glu Leu  
 260 265 270  
 Glu Arg Leu Arg Ala Asp Asp Ile Leu Ser Ala Glu Val Ile Thr Thr  
 275 280 285  
 Pro Gly Val Glu Tyr Gly Ser Asp Val Ser Ser Val Ile Arg Ile Arg  
 290 295 300  
 Thr Ile Arg Arg Arg Gly Gln Gly Ile Ser Ser Gly Phe Arg Gly Val  
 305 310 315 320  
 Phe Ser Gln Gly His Asp Tyr Asn Ala Ser Glu Asn Leu Tyr Leu Asn  
 325 330 335  
 Tyr Arg Thr Gly Glu Leu Asp Leu Phe Val Lys Gly Asp Leu Lys His  
 340 345 350  
 Gly Asn Tyr Tyr Gln Glu Ser Ile Leu Asn Gln Glu Thr Asp Ala Ser  
 355 360 365  
 Ser Arg Trp Glu Val Lys Gly Gly Ala Thr Ser Phe His Lys Ala Val  
 370 375 380  
 Tyr Phe Ser Gly Glu Val Gly Phe Asn Tyr Glu Leu Asp Asp Lys Asn  
 385 390 395 400  
 Ser Leu Gly Ala Arg Tyr Met Pro Gly Ala Asn Val Gly Ser Val Asn  
 405 410 415  
 Arg Thr Asn Leu Gly Asn Asn Phe Val Tyr Lys Asp Gly Glu Lys Ile  
 420 425 430  
 Glu Glu Ile Ser Ser Leu Gln His Ala His Thr Tyr Pro Thr Trp Thr  
 435 440 445  
 His Ser Val Asn Gly Tyr Tyr Asn Gly Val Phe Gly Gln Trp Asn Val  
 450 455 460  
 Asp Phe Asn Ala Asp Tyr Leu Leu Gly Lys Asn Asn Ser Thr Asn Glu  
 465 470 475 480  
 Val Phe Asn Asn Asp Asp Lys Ala Ala Gln Ser Glu Asn Glu Val Arg  
 485 490 495  
 Asn Tyr Leu Tyr Ala Met Arg Met Val Val Lys Arg Ser Phe Arg Lys

500					505					510					
Gly	Thr	Leu	Ser	Phe	Gly	Thr	Glu	Glu	Thr	Phe	Thr	Asn	Arg	His	Asp
515					520					525					
Val	Phe	Val	Gln	Ser	Gly	Phe	Ser	Asp	Asn	Ala	Asp	Asp	His	Ile	Lys
530					535					540					
Gln	Ser	Ile	Tyr	Ser	Val	Phe	Ala	Asp	Tyr	Ser	Leu	His	Leu	Asp	Lys
545					550					555					
Phe	Asn	Val	Ala	Val	Gly	Leu	Arg	Tyr	Glu	His	Gln	Lys	Thr	Asp	Tyr
565					570					575					
Tyr	Glu	Tyr	Gly	Val	His	Gln	Asp	Glu	Gln	Ser	Pro	Val	Tyr	Asn	Asp
580					585					590					
Ile	Val	Pro	Val	Ala	Leu	Val	Gly	Tyr	Glu	Asp	Lys	Gly	Trp	His	Ala
595					600					605					
Ser	Leu	Ser	Tyr	Arg	Leu	Ile	Arg	Asn	Asn	Pro	Asp	Tyr	His	Met	Leu
610					615					620					
Ser	Ser	Ser	Ile	Thr	Tyr	Ser	Ser	Lys	Tyr	Met	Tyr	Arg	Ser	Gly	Asp
625					630					635					
Pro	Leu	Leu	Val	Pro	Gln	Lys	His	His	Val	Phe	Ile	Leu	Asp	Ala	Gly
645					650					655					
Ser	Arg	Trp	Ala	Phe	Val	Asn	Leu	Phe	Phe	Asp	Arg	Thr	Leu	Asp	Leu
660					665					670					
Tyr	Thr	Arg	Phe	Leu	Lys	Pro	Tyr	Asn	Asp	Glu	Thr	His	Pro	Gly	Val
675					680					685					
Leu	Leu	Phe	Thr	Met	Ala	Ser	Ile	Pro	Thr	Thr	Asp	Thr	Tyr	Gly	Met
690					695					700					
Asn	Leu	Asn	Val	Ser	Pro	Lys	Ile	Gly	Cys	Trp	Gln	Pro	Gln	Leu	Asn
705					710					715					
Gly	Gly	Met	Tyr	Phe	Tyr	Asp	Ala	Asp	Val	Arg	Ser	Leu	Gly	Ile	Thr
725					730					735					
Arg	His	Trp	Asn	Glu	Pro	Gln	Phe	Tyr	Phe	Glu	Leu	Asp	Asn	Ser	Phe
740					745					750					
Thr	Phe	Pro	Asp	Gly	Trp	Phe	Leu	Asn	Val	Asn	Gly	Asn	Ile	Ser	Thr
755					760					765					
Ala	Ala	Lys	Gln	Ser	Tyr	Ser	Leu	Ile	His	Arg	Glu	Gly	Thr	Val	Asn
770					775					780					
Ala	Arg	Leu	Ser	Lys	Ser	Phe	Leu	Glu	Asp	Ala	Leu	Met	Ile	Thr	Leu
785					790					795					
Thr	Ala	Asp	Asp	Ile	Phe	His	Thr	Arg	Tyr	His	Tyr	Met	Asp	Gly	Tyr
805					810					815					
Gly	Val	Arg	Ser	His	Ile	Leu	Thr	Arg	Ser	Tyr	Asn	Asp	Asn	Gln	Arg
820					825					830					
Phe	Gly	Ile	Gln	Ile	Ser	Tyr	Lys	Phe	Asn	Ala	Thr	Lys	Ser	Lys	Tyr
835					840					845					
Lys	Gly	Thr	Gly	Ala	Gly	Gln	Ser	Glu	Lys	Gln	Arg	Leu			
850					855					860					

<210> 8327  
 <211> 188  
 <212> PRT  
 <213> B.fragilis

<400> 8327  
 Phe Cys Trp Leu Met Ala Lys Leu Thr Ile Phe Arg Phe Arg Gly His  
 1 5 10 15  
 Ile Ser Arg Glu Arg Phe Arg Gln Leu Phe Val Glu Ile Tyr Pro  
 20 25 30  
 Arg Leu Leu Arg Tyr Ala Ile Gln Leu Met Ser Asp Arg Glu Glu Ala  
 35 40 45  
 Lys Asp Ile Val Gly Glu Val Met Glu Glu Ala Trp Lys Cys Phe Asp



50		55		60
Arg Leu Glu Ala Glu Thr Gln Asn Ala Tyr Phe Tyr Thr Ala Thr Arg				
65		70		75
Asn Thr Cys Leu Asn Arg Leu Lys His Leu Arg Val Glu Gln Gln His				80
	85		90	95
Leu Asp Thr Leu Arg Glu Val Thr Arg Met Asp Val Asn Thr Gly Tyr				
	100		105	110
Arg Gln His Glu Ala Gln Leu Gln Gln Ala Glu Thr Ile Ala Cys Ser				
	115		120	125
Leu Ser Glu Pro Thr Arg Thr Ile Leu Arg Leu Cys Tyr Trp Glu Lys				
	130		135	140
Leu Thr Tyr Arg Gln Val Ala Glu Arg Leu Glu Ile Ser Pro Asp Thr				
	145		150	155
Val Lys Lys His Ile Ser Lys Ala Leu Arg Ile Leu Arg Asn Glu Met				160
	165		170	175
Asn Gly Lys Glu Glu Thr Asn Gly Thr Glu Arg Gly				
	180		185	

<210> 8328  
 <211> 153  
 <212> PRT  
 <213> B.fragilis

<400> 8328
Cys Pro Ala Arg Arg Arg Lys Trp Arg Ile Lys Glu Ser Tyr Leu Val
1 5 10 15
Cys Ser Ala Gly Asn Ser Gly Ala Ser Ser Trp Lys Lys Ile Thr Thr
20 25 30
Pro Gly Asp Ala Glu Asn Val Leu Thr Val Gly Ala Ile Asp Arg Arg
35 40 45
Gly Val Leu Ala Ser Phe Ser Ser Ile Gly Asn Thr Ala Asp Asn Arg
50 55 60
Val Lys Pro Asp Val Val Ala Val Gly Leu Asn Ser Asp Val Met Gly
65 70 75 80
Thr Asn Gly Asn Leu Arg Lys Ala Ser Gly Thr Ser Phe Ala Ser Pro
85 90 95
Ile Leu Cys Gly Met Val Thr Cys Leu Trp Gln Ala Cys Pro Gln Leu
100 105 110
Thr Ala Lys Glu Ile Ile Glu Leu Val Arg Gln Ser Gly Asp Arg Val
115 120 125
Asp Phe Pro Asp Asn Ile Tyr Gly Tyr Gly Val Pro Asp Leu Trp Lys
130 135 140
Ala Tyr Gln Ser Val Ser Lys Lys Lys
145 150

<210> 8329  
 <211> 80  
 <212> PRT  
 <213> B.fragilis

<400> 8329
Val Leu Arg Ser Glu Asp Glu Thr Ser Glu His Leu Val Glu Gln Asp
1 5 10 15
Tyr Leu Ala Ala Val Glu Phe Ala Asp Ser Val Gly Val Asp Val
20 25 30
Val Asn Thr Ser Leu Gly Tyr Phe Thr Phe Asp Asp Ser Thr Lys Asn
35 40 45
Tyr Lys Tyr Arg Asp Leu Asp Gly His His Ala Leu Met Ser Arg Gln
50 55 60

Ala Ser Lys Met Ala Asp Lys Gly Ile Val Leu Gly Val Gln Cys Arg  
 65 70 75 80

<210> 8330  
 <211> 590  
 <212> PRT  
 <213> B.fragilis

<400> 8330

Glu Arg Thr Arg Lys Ile Ile Ala Asn Thr Leu Lys Asn Met Thr Pro  
 1 5 10 15  
 Glu Leu Ala Tyr Phe Leu Lys Ile Asn Ile Ala Ile Ala Leu Phe Tyr  
 20 25 30  
 Ala Phe Tyr Arg Leu Phe Phe Tyr Arg Asp Thr Phe Phe Gln Trp Arg  
 35 40 45  
 Arg Thr Ala Leu Leu Cys Phe Leu Val Ile Ser Pro Leu Tyr Pro Val  
 50 55 60  
 Leu Asn Ile Gln Glu Trp Ile Arg Ser His Glu Pro Met Val Ala Met  
 65 70 75 80  
 Val Asp Leu Tyr Ala Thr Ile Val Leu Pro Glu Ile Glu Ile Thr Pro  
 85 90 95  
 Glu Val Arg Ala Ala Asp Trp Gln Ser Ile Ile Leu Ser Thr Val Asn  
 100 105 110  
 Ile Ile Tyr Trp Ser Gly Val Thr Leu Leu Leu Val Arg Phe Phe Ala  
 115 120 125  
 Gln Leu Ala Ser Ile Leu Arg Leu Arg Cys Arg Lys Asp Gln  
 130 135 140  
 Ile Glu Gly Ile Pro Val Tyr Leu Leu Asp Lys Glu Ser Gly Pro Phe  
 145 150 155 160  
 Ser Phe Phe His Trp Ile Phe Ile Tyr Pro Gln Ala His Pro Gln Asn  
 165 170 175  
 Glu Leu Ser Glu Ile Leu Thr His Glu Gly Thr His Ala Arg Gln Arg  
 180 185 190  
 His Ser Ile Asp Val Ile Ile Ser Glu Leu Met Cys Ile Ala Cys Trp  
 195 200 205  
 Phe Asn Pro Phe Met Trp Leu Met Lys Arg Glu Val Arg Asn Asn Leu  
 210 215 220  
 Glu Tyr Met Ala Asp Asn Arg Val Leu Glu Ala Gly His Asp Ser Lys  
 225 230 235 240  
 Ser Tyr Gln Tyr His Leu Leu Gly Leu Ala His Gln Lys Ser Ala Ile  
 245 250 255  
 Thr Leu Ser Asn Ser Phe Asn Val Leu Pro Leu Lys Asn Arg Ile Thr  
 260 265 270  
 Met Met Asn Lys Lys Arg Thr Lys Glu Ile Gly Arg Thr Lys Tyr Leu  
 275 280 285  
 Leu Phe Ile Pro Leu Ala Leu Ala Leu Met Ile Val Ser Asn Ile Glu  
 290 295 300  
 Ala Val Ala Arg Thr Thr Lys Ser Ile Ala Gln Glu Val Met Gln Thr  
 305 310 315 320  
 Val Glu Glu Gln Ile Glu Pro Glu Asn Ala Val Ala Val Lys Glu Ser  
 325 330 335  
 Thr Ser Ser Pro Gln Ala Ala Asn His Ile Ser Gln Pro Gln Glu Ser  
 340 345 350  
 Gly Ile Ala Glu Gln Pro Ala Gln Glu Glu Ser Gln Glu Ile Val  
 355 360 365  
 Phe Glu Val Val Glu Lys Met Pro Glu Phe Pro Gly Gly Val Arg Asn  
 370 375 380  
 Met Asn His Phe Ile Asn Ser His Leu Arg Tyr Pro Val Ile Ala Gln  
 385 390 395 400

Glu Asn Gly Thr Gln Gly Gln Val Ile Ala Gln Phe Val Ile Gln Ala  
 405 410 415  
 Asp Gly Thr Leu Ser Asp Leu Lys Ile Val Lys Ser Val Asp Pro Leu  
 420 425 430  
 Leu Asp Ala Glu Ala Met Arg Val Ile Lys Glu Met Pro Lys Trp Gln  
 435 440 445  
 Pro Gly Lys Gln Arg Gly Ile Ala Val Ala Thr Arg Val Thr Val Pro  
 450 455 460  
 Ile Arg Phe Arg Leu Met Asp Ser Asp Ser Ala Pro Ser Thr Asp Ser  
 465 470 475 480  
 Asn Lys Asn Gln Glu Asn Thr Ile Phe Asp Val Val Glu Arg Ala Pro  
 485 490 495  
 Glu Phe Pro Gly Gly Met Glu Ala Cys Leu Lys Tyr Met Tyr Lys Asn  
 500 505 510  
 Ile Lys Tyr Pro Ala Val Ala Met Glu Ala Gly Ile Gln Gly Gln Val  
 515 520 525  
 Val Ile Gln Ile Val Ile Asp Lys Asp Gly Lys Ile His Asp Pro Lys  
 530 535 540  
 Ile Val Arg Gly Val Ser Pro Glu Leu Asn Ala Glu Ala Val Arg Val  
 545 550 555 560  
 Ile Ser Asn Met Pro Gln Trp Ile Pro Gly Lys Gln Lys Gly Lys Asn  
 565 570 575  
 Val Ala Thr Arg Phe Thr Leu Pro Val Arg Phe Arg Leu Ala  
 580 585 590

<210> 8331  
 <211> 319  
 <212> PRT  
 <213> B.fragilis

<400> 8331

Thr Glu Arg Arg Lys Gln Met Glu Gln Arg Glu Asp Asn Lys Asn Asp  
 1 5 10 15  
 Ile Ala Ser Cys Arg Leu Lys Asn Leu Phe Gly Glu Ala Leu Gly Asp  
 20 25 30  
 Leu Ser Ser Val Glu Glu Thr Glu Thr Ala Trp Gln Ala Phe Ala Ser  
 35 40 45  
 Arg Arg Arg Gln Glu Arg Val Arg Thr Leu Val Phe Gly Phe Ala Ala  
 50 55 60  
 Val Ala Ser Val Ala Leu Leu Phe Trp Gly Phe Ser Gln Glu Asn  
 65 70 75 80  
 Phe Leu Ser Gln Glu Val Glu Val Phe Ala Ser Val Asn Ser Pro Asp  
 85 90 95  
 Lys Leu Val Met Thr Glu Asp Lys Gly Ile Ile Ala Val Arg Thr Pro  
 100 105 110  
 Pro Ala Thr Thr Ile Thr Ile His Leu Pro Asp Ser Thr Glu Val Leu  
 115 120 125  
 Leu Asn Ala Asn Ser Arg Leu Glu Tyr Pro Lys Ala Phe Thr Gly Asp  
 130 135 140  
 Leu Arg Arg Val Met Leu Glu Gly Ala Ala Arg Phe Asn Val Gln Arg  
 145 150 155 160  
 Asp Thr Leu His Pro Phe Ile Val Glu Thr Gly Ser Leu Gln Thr Arg  
 165 170 175  
 Val Leu Gly Thr Val Phe Asp Val Asp Ser Tyr Gly Cys Gly Thr Thr  
 180 185 190  
 Ser Lys Val Val Leu Tyr Glu Gly Ser Val Gln Val Ser Asp Lys Ala  
 195 200 205  
 Asn Thr Lys Ala Cys Lys Ile Lys Pro Gly Glu Gln Val Tyr Leu Asp  
 210 215 220

Arg Val Gly Asp Ile Cys Ile Ser Gln Ala Asp Ile Cys Met Gln Lys  
 225 230 235 240  
 Ser Trp Thr Glu Gly Leu Phe Ile Phe Asp Asn Val Thr Leu Arg Tyr  
 245 250 255  
 Val Met Gln Glu Ile Gly Ala Trp Tyr Asn Thr Asn Ile Val Phe Arg  
 260 265 270  
 Ser His Pro Leu Leu Glu Glu Arg Ile Tyr Phe Ser Ala Ser Arg His  
 275 280 285  
 Leu Pro Val Gly Glu Ile Leu Asn Val Leu Asn Asp Leu Gln Ile Ala  
 290 295 300  
 Arg Phe Ile Val Glu Gly Asp Lys Ile Val Val Ser Pro Leu Ser  
 305 310 315

<210> 8332

<211> 526

<212> PRT

<213> B.fragilis

<400> 8332

Arg Leu Tyr Gly Lys Ile Asp Val Ala Val Ser Val Thr Leu Pro Gln  
 1 5 10 15  
 Pro Glu Ser Val Asn Thr Leu Thr Arg Ala Gly Gly Pro Tyr Thr Asp  
 20 25 30  
 Thr Asp Ile Lys Asn Ala Asp Leu Ile Phe Asp Lys Asp Ala Lys  
 35 40 45  
 Phe Met Glu Arg Val Lys Val Asp Asn Asp Arg Leu Val Val Thr Gly  
 50 55 60  
 Thr Gly Ile Asn Phe Thr Val Arg Leu Asp Ala Thr Ser Glu Arg Arg  
 65 70 75 80  
 Ile Ile His Leu Val Ala Asn Gly Arg Ser Ala Asp Gly Thr Ser Asp  
 85 90 95  
 Arg Leu Asn Phe Gly Gly Ile Thr Pro Gly Met Ala Glu Asn Ala Ala  
 100 105 110  
 Ile Ser Ser Leu Gln Thr Ala Ser Leu Glu His Val Asp Glu Gly Glu  
 115 120 125  
 Ser Thr Leu Leu Asn His Val Met Pro Leu Val Met Trp Gly Arg Phe  
 130 135 140  
 Ala Leu Asn Gly Ile Asn Ile Val Thr Lys Ala Glu Gly Val Lys Leu  
 145 150 155 160  
 Leu Arg Ser Thr Ala Cys Ile Gln Val Lys Lys Gly Asn Gly Gly Gly  
 165 170 175  
 Asn Thr Gly Leu Gly Asp Phe Val Ile Glu Gly Ile Thr Val His Gln  
 180 185 190  
 Gly Ala Cys His Gly Phe Leu Ala Pro Thr Asp Cys Thr Gly Glu Val  
 195 200 205  
 Asn Thr Pro Val Val Ala Asn Pro Val Thr Gly Gly Thr Tyr Leu Asp  
 210 215 220  
 Tyr Arg Lys Gly Trp Val Asn Gly Ala Glu Pro Ser Leu Tyr Ile Tyr  
 225 230 235 240  
 Glu Arg Asn Cys Ser Ala Ser Asp Tyr Met Gly Val Val Ile Ala Ala  
 245 250 255  
 Arg Tyr Lys Gly Lys Lys Gly Tyr Tyr Lys Val Val Met Asn Gly Asn  
 260 265 270  
 Asp Gly Ser Pro Leu Asn Ile Val Arg Asn His Arg Tyr Ile Val Thr  
 275 280 285  
 Val Val Gly Val Asn Gly Pro Gly Tyr Glu Ser Pro Asp Ile Ala Val  
 290 295 300  
 Ala Ser Ala Pro Ser Asn Ala Leu Lys Val Glu Leu Thr Asp Glu Asp  
 305 310 315 320

Thr Asp Leu Pro Cys Ile Val Ala Asp Gly Gln Tyr Arg Met Ala Ser  
 325 330 335  
 Ser Asn Asn Val Phe Ser Leu Tyr Gly Lys Thr Gly Val Thr Thr Ser  
 340 345 350  
 Ala Thr Gly Val Asp Ile Cys Thr Val Tyr Ser Ser Arg Gly Ile Gln  
 355 360 365  
 Pro Val Leu Thr Leu Pro Asp Asp Cys Asn Trp Leu Thr Asn Leu Ser  
 370 375 380  
 Ala Gln Ala Leu Gly Ser Asn Lys Tyr Lys Ile Thr Gly Asp Phe Thr  
 385 390 395 400  
 Ser Ala Ala Asn Asp Ala Val Ala Thr Thr Leu Thr Met Thr Cys Asp  
 405 410 415  
 Asn Leu Ser Gln Pro Val Arg Val Ser Trp Asn Pro Ile Ile Ser Asp  
 420 425 430  
 Gln Lys Asp Ile Asp Ser Phe Val Leu Asp Leu Val Gly Ser Thr Asp  
 435 440 445  
 Arg Asn Trp Thr Val Arg Val Leu Asn Pro Thr Ser Pro Gly Trp Leu  
 450 455 460  
 Phe Leu His Pro Ser Ala Ala Ser Pro Gly Ala Leu Pro Gly Asp Gly  
 465 470 475 480  
 Met Val Ser Glu Leu Ser Ser Lys Tyr Ser Ser His Ala Tyr Leu His  
 485 490 495  
 Val Ala Phe Gly Ala Asn Arg Arg Gly Thr Val Gln Met Thr Ser Ala  
 500 505 510  
 Ser Gly Gly Glu Thr Val Ala Arg Lys Ile Val Val Ile Gln  
 515 520 525

&lt;210&gt; 8333

&lt;211&gt; 431

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8333

Thr Phe Ser Gly Ile Pro His Ala Cys Lys Pro Pro Ser Leu His Cys  
 1 5 10 15  
 Ser Ser Ser Glu Arg His Lys Ala Pro Leu Tyr Gly His Asp Val Arg  
 20 25 30  
 Glu Ile Thr Pro His Ile Pro His Arg Ser Asp Arg Val Pro Thr Gly  
 35 40 45  
 Gly His Ser Gly Glu Thr Asp Pro Lys His Arg Tyr Arg Thr Ala Leu  
 50 55 60  
 Cys Val Pro Pro Leu Gln Gln Ala Gly Lys Ala His Ala Leu Pro Val  
 65 70 75 80  
 Ile Pro Tyr Arg Lys His Cys Phe Pro Arg Gly Leu Leu Phe Cys Ser  
 85 90 95  
 Ser Phe Ile Glu Arg Leu Phe Asn Asn Ser His Pro Ser Val Ser Ile  
 100 105 110  
 Gly Phe Val Thr Ile Leu Asp Ala Thr Gln Phe Ile Ile Lys Leu Leu  
 115 120 125  
 Thr Asn Arg Ser Arg Leu Ser Ile Phe Arg Asn His Ile Arg Leu Ala  
 130 135 140  
 Ile Leu Lys Val Val Asn Thr Phe Asp Arg Thr Asp Asn Gly Ser Ser  
 145 150 155 160  
 Thr Thr Ser Ser Arg Phe Phe Glu Ser Ala Gln Leu Phe Phe Gly Tyr  
 165 170 175  
 Arg Thr Ala Leu Tyr Phe His Ala His Ile Phe Arg Gln Leu His Gln  
 180 185 190  
 Ala Leu Ile Gly Asp Gly Arg Lys Asp Gly Ser Arg Leu Arg Ser Asp  
 195 200 205

Val Gly Ile Val Phe Asn Thr Lys Glu Val Gly Arg Thr Thr Phe Val  
 210 215 220  
 Asn Val Phe Phe Ile Phe Cys Val Gln Ile Glu Leu Ala Gly Ile Thr  
 225 230 235 240  
 Gln Val Val Ser Leu Leu Ile Gly Ala Gln Thr Gly Cys Ile Val Ser  
 245 250 255  
 Thr Asp Phe Val Asp Thr Gly Ser Val Arg Arg Ser Thr Val Val Leu  
 260 265 270  
 Ala Asp Asn Asp Ile Arg Ile Gly Arg Glu Ala Thr Leu Glu Ile Arg  
 275 280 285  
 Thr Asp Arg Cys Asp Lys Tyr Asn Lys His Ile Phe Ile Cys Arg Met  
 290 295 300  
 Asp Thr His Leu Gly Thr Gly Ser Asp Lys Gln Arg Ala Asn Val Lys  
 305 310 315 320  
 Arg Ser Ser Thr Leu Val Arg Arg Asn Lys Ala Phe Val Gln Phe Tyr  
 325 330 335  
 His Phe Gln Asp Ser Phe Leu Glu Thr Phe Arg Arg Gln Phe Ser His  
 340 345 350  
 His Asp Ala Leu Thr Gly Gly Leu Gln Thr Arg Ser Ile Leu Leu Gln  
 355 360 365  
 Thr Glu Asn Thr His Phe Ala Val Phe Thr Thr Glu Ser Phe Gln Thr  
 370 375 380  
 Leu Glu Gly Phe Leu Thr Ile Met Gln Ala Ser Gly Ser His Val Gln  
 385 390 395 400  
 Val Gln His Leu Ala Thr Ala Tyr Phe Glu Phe Ala Pro Cys Ala Val  
 405 410 415  
 Thr Glu Ile Asp Ser His Ile Val Val Cys Leu His Ile Thr Glu  
 420 425 430

&lt;210&gt; 8334

&lt;211&gt; 301

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8334

Cys Val Leu Gly Gly Ile Val Leu Phe Cys Ser Val Leu Phe Leu Tyr  
 1 5 10 15  
 Leu Arg Lys Lys Tyr Glu Ser Ile Lys Lys Asp Ala Ser Val Leu Ile  
 20 25 30  
 Ala Gly Leu Val Val Ala Ser Cys Ala Asn Asp Leu Asp Gly Phe Ile  
 35 40 45  
 Ser Ile Pro Asp Asn Ala Thr Gly Val Gln Gln Ile Ser Thr Arg Ser  
 50 55 60  
 Ser Ser Asp Asn Leu Lys Ile Val Tyr His Gly Lys Val Tyr Glu Thr  
 65 70 75 80  
 Leu Tyr Thr Ile Ile Asp Asp Ser Ile Tyr Ser Tyr Gln Asn Ser Glu  
 85 90 95  
 Val Lys Asp Leu Met Asp Asn Leu Ser Glu Thr Arg Pro Asn Leu Arg  
 100 105 110  
 Thr Phe Ile His Gly Asn Gly Val Ile Glu Tyr Phe Asp Asp Glu Asn  
 115 120 125  
 Asp Phe Asn Leu Asn Lys Glu Arg Ile Met Ser Glu Tyr Glu Lys Glu  
 130 135 140  
 Ser Leu Ser Thr Ser Leu Ser Glu Arg Trp Phe Pro Thr Asp Asn Val  
 145 150 155 160  
 Pro Gln Leu Ala Pro Ile Asp Pro Glu Asn Asn Glu Val Glu Ile Tyr  
 165 170 175  
 Leu Tyr Glu Asp Pro Tyr Tyr Leu Gly Asp Leu Phe Ser Leu Gln Arg  
 180 185 190

Asn	Arg	Ser	Asp	Ser	Asp	Tyr	Asn	Glu	Leu	Ser	Lys	Val	Trp	Asn	Phe
	195						200					205			
Gly	Gly	Gln	Ile	Leu	Ser	Met	Ile	Val	His	Thr	Ile	Gly	Phe	Gly	Gly
	210					215					220				
Val	Phe	Thr	Phe	Tyr	Glu	Arg	Met	Gly	Cys	Gln	Gly	Lys	Gly	Ile	Thr
225					230					235					240
Leu	Val	Leu	Thr	Ala	Gly	Gln	Tyr	Ile	Asn	Leu	Cys	Ser	Glu	Leu	Ser
				245					250					255	
Ala	Asp	Ala	Met	Arg	Gly	Ile	Ser	Tyr	Gly	Ser	Ile	Ala	Met	Ser	Asp
			260					265					270		
Leu	Arg	Ser	Leu	His	Trp	Ser	Gly	Ile	Ala	Gly	Asn	Trp	Asn	Asn	Arg
		275					280					285			
Ile	Cys	Cys	Ile	Lys	Val	Asp	Arg	Tyr	Ile	Gly	Met	Met			
	290					295					300				

&lt;210&gt; 8335

&lt;211&gt; 347

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8335

Trp	Thr	Arg	Gly	Tyr	Arg	Pro	Ile	Cys	Pro	Leu	Gly	Ala	Val	Asp	Leu
1			5					10						15	
Asp	Asn	Ser	Ala	Ser	Ser	Arg	Asn	Ile	Leu	Arg	Asn	Leu	Asp	Ala	Phe
			20					25					30		
Gly	Gln	Thr	Ala	Val	Val	Ala	Arg	Tyr	Ser	Ser	Val	Asn	Glu	Ala	Arg
		35					40					45			
Thr	Ala	Met	Gln	Glu	Gly	Lys	Ile	Tyr	Gly	Phe	Phe	Tyr	Ile	Pro	Lys
	50					55					60				
Gly	Met	Ser	Ala	Asp	Ala	Gln	Ser	Gln	Arg	Gln	Pro	Lys	Leu	Ser	Phe
65				70					75						80
Tyr	Thr	Asn	Asn	Ser	Tyr	Leu	Ile	Ala	Gly	Ser	Leu	Leu	Phe	Lys	Asp
				85					90					95	
Met	Lys	Met	Met	Ser	Glu	Leu	Ala	Ser	Gly	Ala	Ala	Ala	Arg	Ser	Val
			100					105					110		
Leu	Tyr	Ala	Lys	Gly	Ala	Thr	Glu	Asp	Gln	Ala	Met	Gly	Tyr	Leu	Gln
		115					120					125			
Pro	Ile	Val	Ile	Asp	Thr	His	Pro	Ile	Gln	Asn	Pro	Trp	Leu	Asn	Tyr
		130				135					140				
Ser	Val	Tyr	Leu	Cys	Asn	Thr	Leu	Val	Pro	Gly	Val	Leu	Met	Leu	Leu
145				150					155						160
Ile	Phe	Met	Val	Thr	Val	Phe	Ser	Ile	Gly	Val	Glu	Ile	Lys	Asp	Arg
			165						170					175	
Thr	Ala	Arg	Glu	Trp	Leu	Arg	Leu	Ser	Asn	Asn	Ser	Ile	Tyr	Ile	Ala
			180					185					190		
Leu	Ala	Gly	Lys	Leu	Leu	Pro	Gln	Thr	Val	Val	Phe	Phe	Ile	Met	Gly
		195					200					205			
Ile	Phe	Tyr	Asn	Val	Tyr	Leu	Tyr	Gly	Tyr	Leu	His	Phe	Pro	Cys	Asn
	210					215					220				
Ser	Gly	Ile	Leu	Pro	Met	Leu	Leu	Ala	Thr	Leu	Cys	Leu	Val	Leu	Ala
225					230					235					240
Ser	Gln	Cys	Cys	Gly	Ile	Leu	Met	Ile	Gly	Thr	Leu	Pro	Thr	Leu	Arg
				245					250					255	
Leu	Gly	Leu	Ser	Phe	Ala	Ser	Leu	Trp	Gly	Val	Ile	Ser	Phe	Ser	Ile
			260					265					270		
Ser	Gly	Phe	Ser	Phe	Pro	Val	Met	Ala	Met	Asn	Pro	Val	Leu	Gln	Ala
		275					280					285			
Leu	Ser	Asn	Leu	Phe	Pro	Leu	Arg	His	Tyr	Phe	Leu	Ile	Tyr	Val	Asp
	290					295					300				

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<210> 8336
<211> 73
<212> PRT
<213> B.fragilis
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[illegible]

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<210> 8337
<211> 470
<212> PRT
<213> B.fragilis
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Asn	Ser	Cys	Met	Glu	Lys	Ile	Ser	Arg	Thr	Lys	Ile	Val	Asp	Leu	Met
1				5					10					15	
Lys	Arg	Glu	Asp	Phe	Gly	Ala	Met	Val	Asn	Val	Lys	Gly	Trp	Val	Arg
			20					25					30		
Thr	Arg	Arg	Gly	Ser	Lys	Gln	Val	Asn	Phe	Ile	Ala	Leu	Asn	Asp	Gly
		35				40						45			
Ser	Thr	Ile	Asn	Asn	Val	Gln	Val	Val	Val	Asp	Leu	Ala	Asn	Phe	Asp
	50					55					60				
Glu	Glu	Met	Leu	Lys	Gln	Ile	Thr	Thr	Gly	Ala	Cys	Leu	Ser	Val	Asn
65				70						75					80
Gly	Val	Leu	Thr	Glu	Ser	Val	Gly	Ala	Gly	Gln	Lys	Ala	Glu	Val	Gln
				85					90					95	
Ala	Arg	Glu	Ile	Glu	Val	Leu	Gly	Thr	Cys	Asp	Asn	Thr	Tyr	Pro	Leu
			100					105					110		
Gln	Lys	Lys	Gly	His	Ser	Met	Glu	Phe	Leu	Arg	Glu	Ile	Ala	His	Leu
		115					120					125			
Arg	Pro	Arg	Thr	Asn	Thr	Phe	Gly	Ala	Val	Phe	Arg	Ile	Arg	His	Asn
	130					135					140				
Met	Ala	Ile	Ala	Ile	His	Lys	Phe	Phe	His	Glu	Lys	Gly	Phe	Phe	Tyr
145					150					155					160
Phe	His	Thr	Pro	Ile	Ile	Thr	Ala	Ser	Asp	Cys	Glu	Gly	Ala	Gly	Gln
				165					170					175	
Met	Phe	Gln	Val	Thr	Thr	Met	Asn	Leu	Tyr	Asp	Leu	Lys	Lys	Asp	Glu
			180				185						190		
Asn	Gly	Ser	Ile	Val	Tyr	Asp	Asp	Asp	Phe	Phe	Gly	Lys	Gln	Ala	Ser
		195					200					205			
Leu	Thr	Val	Ser	Gly	Gln	Leu	Glu	Gly	Glu	Leu	Ala	Thr	Ala	Leu	
	210					215					220				
Gly	Ala	Ile	Tyr	Thr	Phe	Gly	Pro	Thr	Phe	Arg	Ala	Glu	Asn	Ser	Asn



225 230 235 240  
 Thr Pro Arg His Leu Ala Glu Phe Trp Met Ile Glu Pro Glu Val Ala  
 245 250 255  
 Phe Asn Glu Ile Gln Glu Asn Met Asp Leu Ala Glu Glu Phe Ile Lys  
 260 265 270  
 Tyr Cys Val Arg Trp Ala Leu Asp Asn Cys Ala Asp Asp Val Lys Phe  
 275 280 285  
 Leu Asn Asp Met Phe Asp Lys Gly Leu Ile Glu Arg Leu Glu Gly Val  
 290 295 300  
 Leu Lys Glu Asp Phe Val Arg Leu Pro Tyr Thr Glu Gly Ile Lys Ile  
 305 310 315 320  
 Leu Glu Glu Ala Val Ala Lys Gly His Lys Phe Glu Phe Pro Val Tyr  
 325 330 335  
 Trp Gly Val Asp Leu Ala Ser Glu His Glu Arg Tyr Leu Val Glu Asp  
 340 345 350  
 His Phe Lys Arg Pro Val Ile Leu Thr Asp Tyr Pro Lys Glu Ile Lys  
 355 360 365  
 Ala Phe Tyr Met Lys Gln Asn Glu Asp Gly Lys Thr Val Arg Ala Met  
 370 375 380  
 Asp Val Leu Phe Pro Lys Ile Gly Glu Ile Ile Gly Gly Ser Glu Arg  
 385 390 395 400  
 Glu Ser Asp Tyr Asn Lys Leu Met Thr Arg Ile Glu Glu Met His Ile  
 405 410 415  
 Pro Met Lys Asp Met Trp Trp Tyr Leu Asp Thr Arg Lys Phe Gly Thr  
 420 425 430  
 Cys Pro His Ser Gly Phe Gly Leu Gly Phe Glu Arg Leu Leu Leu Phe  
 435 440 445  
 Val Thr Gly Met Ser Asn Ile Arg Asp Val Ile Pro Phe Pro Arg Thr  
 450 455 460  
 Pro Arg Asn Ala Asp Phe  
 465 470

<210> 8338  
 <211> 124  
 <212> PRT  
 <213> B.fragilis

<400> 8338  
 Ile Tyr Ser Met Glu Lys Leu Thr Met Gln Glu Glu Glu Val Met Ile  
 1 5 10 15  
 Tyr Ile Trp Glu Leu Glu Ser Cys Tyr Val Lys Asp Ile Val Ala Lys  
 20 25 30  
 Phe Glu Gln Pro Thr Pro Pro Tyr Thr Thr Val Ala Ser Ile Val Lys  
 35 40 45  
 Asn Leu Glu Arg Lys Lys Tyr Val Lys Ala Gln Arg Val Gly Asn Thr  
 50 55 60  
 Tyr Leu Tyr Thr Pro Ser Ile Lys Glu Ser Glu Tyr Lys Arg Ser Phe  
 65 70 75 80  
 Met Ser Gly Val Val Arg Asn Tyr Phe Glu Asn Ser Tyr Lys Glu Met  
 85 90 95  
 Val Ser Phe Phe Ala Lys Asp Gln Lys Ile Ser Thr Asn Asp Leu Lys  
 100 105 110  
 Glu Ile Ile Asp Met Ile Glu Lys Gly Gln Glu Lys  
 115 120

<210> 8339  
 <211> 746  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8339

Lys Thr Asn Ile Leu Pro Lys Met Lys Ile Lys Arg Leu Tyr Leu Leu  
 1 5 10 15  
 Gly Ala Trp Leu Leu Leu Gly Val Ser Ala Ser Ala Gln Ile Thr Ser  
 20 25 30  
 Ile Gln Pro Gln Pro Gln Gln Val Leu Ser Gln Ala Arg Asn Leu Ser  
 35 40 45  
 Leu Pro Asp Thr Tyr Leu Ile Val Gly Asp Thr Glu Ala Asn Thr His  
 50 55 60  
 Ala Val Ser Ala Leu Lys Thr Leu Leu Ala Gly Lys His Ser Asp Lys  
 65 70 75 80  
 Asn Gly Phe Arg Ile Tyr Ile Gly Glu Lys Gly Asp Lys Ala Ile Arg  
 85 90 95  
 Lys Phe Ala Arg Gln Ile Pro Asn His Lys Glu Gly Tyr Tyr Leu Ala  
 100 105 110  
 Ile Asn Asp Lys Glu Ile Val Leu Ala Gly Gln Asp Glu Arg Gly Thr  
 115 120 125  
 Phe Tyr Ala Leu Gln Thr Leu Ala Gln Leu Leu Asn Asp Asn Gln Leu  
 130 135 140  
 Pro Val Val Glu Ile Lys Asp Tyr Pro Ser Val Arg Phe Arg Gly Val  
 145 150 155 160  
 Val Glu Gly Phe Tyr Gly Thr Pro Trp Ser His Glu Ala Arg Leu Arg  
 165 170 175  
 Gln Leu Lys Phe Tyr Gly Glu Asn Lys Met Asn Thr Tyr Ile Tyr Gly  
 180 185 190  
 Pro Lys Asp Asp Pro Tyr His Ser Ser Pro Asn Trp Arg Leu Pro Tyr  
 195 200 205  
 Pro Glu Lys Glu Ala Leu Gln Leu Gln Glu Leu Val Lys Val Ala Asn  
 210 215 220  
 Glu Asn Glu Val Asp Phe Val Trp Ala Ile His Pro Gly Gln Asp Ile  
 225 230 235 240  
 Lys Trp Asn Gln Glu Asp Arg Asp Leu Leu Leu Ala Lys Phe Glu Lys  
 245 250 255  
 Met Tyr Asp Leu Gly Val Arg Ser Phe Ala Val Phe Phe Asp Asp Ile  
 260 265 270  
 Ser Gly Glu Gly Thr Asn Pro Asn Lys Gln Ala Glu Leu Leu Asn Tyr  
 275 280 285  
 Ile Asp Glu Lys Phe Val Lys Val Lys Pro Asp Val Thr Pro Leu Val  
 290 295 300  
 Met Cys Pro Thr Glu Tyr Asn Lys Ser Trp Ser Asn Pro Lys Gly Asn  
 305 310 315 320  
 Tyr Leu Thr Thr Leu Gly Glu Lys Leu Asn Pro Ser Ile Gln Ile Met  
 325 330 335  
 Trp Thr Gly Asp Arg Val Ile Ser Asp Ile Thr Lys Asp Gly Ile Ala  
 340 345 350  
 Trp Ile Asn Ala Arg Ile Lys Arg Pro Ala Tyr Ile Trp Trp Asn Phe  
 355 360 365  
 Pro Val Ser Asp Tyr Val Arg Asp His Leu Leu Leu Gly Pro Val Tyr  
 370 375 380  
 Gly Asn Asp Thr Gln Ile Ala Asp Gln Met Ser Gly Phe Val Thr Asn  
 385 390 395 400  
 Pro Met Glu His Ala Glu Ala Ser Lys Ile Ala Ile Tyr Ser Val Ala  
 405 410 415  
 Gly Tyr Ala Trp Asn Pro Glu Lys Tyr Asn Ser Glu Gln Thr Trp Lys  
 420 425 430  
 Asp Ala Ile Arg Thr Ile Leu Pro Ser Ala Ala Asp Glu Leu Glu Phe  
 435 440 445  
 Phe Ala Ala His Asn Ser Asp Leu Gly Pro Asn Gly His Lys Tyr Arg



115

<210> 8341  
 <211> 205  
 <212> PRT  
 <213> B.fragilis

<400> 8341

Ser Met Lys Ile Ile Ala Val Gly Met Asn Tyr Ala Arg His Asn Glu  
 1 5 10 15  
 Glu Leu Gly His Thr Leu Glu Asn Lys Glu Pro Val Ile Phe Met Lys  
 20 25 30  
 Pro Asp Ser Ala Ile Leu Lys Asp Gly Lys Pro Phe Phe Ile Pro Asp  
 35 40 45  
 Phe Ser Asn Glu Val His Tyr Glu Thr Glu Leu Val Val Arg Ile Asn  
 50 55 60  
 Arg Leu Gly Lys Asn Ile Ala Ser Arg Phe Ala His Arg Tyr Tyr Asp  
 65 70 75 80  
 Ala Val Thr Val Gly Ile Asp Phe Thr Ala Arg Asp Leu Gln Arg Arg  
 85 90 95  
 Phe Arg Glu Ala Gly Asn Pro Trp Glu Leu Cys Lys Gly Phe Asp Ser  
 100 105 110  
 Ser Ala Ala Ile Gly Thr Phe Val Pro Val Glu Gln Leu Ala Asp Val  
 115 120 125  
 Gln Asn Leu His Phe His Leu Asp Ile Asp Gly Lys Thr Val Gln Gln  
 130 135 140  
 Gly His Thr Ala Asp Met Leu Phe Arg Val Asp Asp Ile Ile Ala Tyr  
 145 150 155 160  
 Val Ser Arg Phe Val Thr Leu Lys Ile Gly Asp Leu Leu Phe Thr Gly  
 165 170 175  
 Thr Pro Val Gly Val Gly Pro Val Ser Ile Gly Gln His Leu Glu Gly  
 180 185 190  
 Tyr Leu Glu Thr Glu Lys Leu Leu Asp Phe Tyr Ile Arg  
 195 200 205

<210> 8342  
 <211> 93  
 <212> PRT  
 <213> B.fragilis

<400> 8342

Lys Tyr Glu Met Lys Lys Leu Ala Leu Ile Ala Leu Val Phe Val Ala  
 1 5 10 15  
 Leu Gly Ala Ser Ala Gln Gln Asp Thr Leu Lys Tyr Arg Ile Ser Leu  
 20 25 30  
 Lys Asp Lys Val Gly Asn His Leu Phe Thr Gly Ser Ser Arg Glu Ile  
 35 40 45  
 Leu Val Gly Lys Ser His Arg Pro Pro Pro Ala Ser Ala Val Ala Cys  
 50 55 60  
 Arg Leu Tyr Arg Ser Ala Gly Leu Pro Ser Val Cys Gly Cys His Pro  
 65 70 75 80  
 Arg Gln Gly Ser Glu Asp Cys Gly Tyr Gly Lys Met Gly  
 85 90

<210> 8343  
 <211> 643  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8343

Phe	Ile	Ser	Leu	Leu	Cys	Phe	Ile	Asn	Lys	Pro	Ile	Asn	Thr	Thr	Met
1			5						10					15	
Arg	Thr	Lys	Ser	Ile	Phe	Leu	Leu	Leu	Leu	Leu	Ala	Val	Met	Pro	Leu
			20					25					30		
Cys	Val	Phe	Ser	Gln	Ser	Lys	Ser	Thr	Phe	Glu	Ile	Lys	Asn	Gly	His
		35					40					45			
Phe	Tyr	Arg	Asn	Gly	Lys	Ile	Thr	Pro	Val	Leu	Ser	Gly	Glu	Met	His
	50					55					60				
Tyr	Ala	Arg	Ile	Pro	His	Gln	Tyr	Trp	Arg	His	Arg	Leu	Gln	Met	Met
65					70				75						80
Lys	Gly	Met	Gly	Leu	Asn	Thr	Val	Ala	Thr	Tyr	Val	Phe	Trp	Asn	Leu
				85					90					95	
His	Glu	Pro	Glu	Pro	Gly	Lys	Trp	Asp	Phe	Thr	Gly	Asp	Lys	Asn	Leu
			100					105					110		
Ala	Glu	Phe	Ile	Lys	Thr	Ala	Gly	Glu	Glu	Gly	Met	Met	Val	Ile	Leu
		115					120					125			
Arg	Pro	Gly	Pro	Tyr	Val	Cys	Ala	Glu	Trp	Glu	Phe	Gly	Gly	Tyr	Pro
	130					135					140				
Trp	Trp	Leu	Gln	Asn	Val	Lys	Gly	Met	Glu	Ile	Arg	Arg	Asp	Asn	Pro
145				150					155						160
Glu	Phe	Leu	Lys	Tyr	Thr	Lys	Ala	Tyr	Ile	Asp	Arg	Leu	Tyr	Lys	Glu
			165						170					175	
Val	Gly	Ser	Leu	Gln	Cys	Thr	Lys	Gly	Gly	Pro	Ile	Val	Met	Val	Gln
			180					185					190		
Cys	Glu	Asn	Glu	Phe	Gly	Ser	Tyr	Val	Ala	Gln	Arg	Lys	Asp	Ile	Pro
		195					200					205			
Leu	Glu	Glu	His	Arg	Ala	Tyr	Asn	Ala	Lys	Ile	Lys	Gln	Gln	Leu	Ala
		210				215					220				
Asp	Ala	Gly	Phe	Asn	Val	Pro	Leu	Phe	Thr	Ser	Asp	Gly	Ser	Trp	Leu
225				230					235						240
Phe	Glu	Gly	Gly	Ala	Thr	Pro	Gly	Ala	Leu	Pro	Thr	Ala	Asn	Gly	Glu
				245					250					255	
Ser	Asp	Ile	Glu	Asn	Leu	Lys	Lys	Val	Val	Asp	Gln	Tyr	His	Asp	Gly
		260					265						270		
Lys	Gly	Pro	Tyr	Met	Val	Ala	Glu	Phe	Tyr	Pro	Gly	Trp	Leu	Ser	His
		275				280						285			
Trp	Ala	Glu	Pro	Phe	Pro	Gln	Ile	Gly	Ala	Ser	Gly	Ile	Ala	Arg	Gln
	290					295					300				
Thr	Glu	Lys	Tyr	Leu	Gln	Asn	Asp	Val	Ser	Phe	Asn	Phe	Tyr	Met	Val
305				310					315						320
His	Gly	Gly	Thr	Asn	Phe	Gly	Phe	Thr	Ser	Gly	Ala	Asn	Tyr	Asp	Lys
				325					330					335	
Lys	Arg	Asp	Ile	Gln	Pro	Asp	Met	Thr	Ser	Tyr	Asp	Tyr	Asp	Ala	Pro
		340						345					350		
Ile	Ser	Glu	Ala	Gly	Trp	Val	Thr	Pro	Lys	Tyr	Asp	Ser	Ile	Arg	Asn
		355				360						365			
Val	Ile	Lys	Lys	Tyr	Val	Lys	Tyr	Thr	Ile	Pro	Glu	Ala	Pro	Ala	Pro
	370					375					380				
Asn	Pro	Val	Ile	Glu	Ile	Pro	Ser	Ile	Gln	Leu	Asn	Lys	Val	Ala	Asp
385				390					395						400
Val	Leu	Ala	Phe	Ala	Glu	Lys	Gln	Lys	Pro	Val	Ser	Ser	Asp	Thr	Pro
			405						410					415	
Leu	Thr	Phe	Glu	Gln	Leu	Asn	Gln	Gly	Tyr	Gly	Tyr	Val	Leu	Tyr	Thr
		420						425					430		
Arg	His	Phe	Asn	Gln	Pro	Ile	Ser	Gly	Thr	Leu	Glu	Ile	Pro	Gly	Leu
		435					440					445			
Arg	Asp	Tyr	Ala	Val	Val	Tyr	Val	Asp	Gly	Glu	Gln	Val	Gly	Val	Leu
	450					455					460				

Asn Arg Asn Thr Lys Thr Tyr Ser Met Glu Ile Glu Val Pro Phe Asn  
 465 470 475 480  
 Ala Thr Leu Gln Ile Leu Val Glu Asn Met Gly Arg Ile Asn Tyr Gly  
 485 490 495  
 Ser Glu Ile Val His Asn Thr Lys Gly Ile Ile Ser Pro Val Gln Ile  
 500 505 510  
 Ala Gly Lys Glu Ile Val Gly Gly Trp Asp Met Tyr Gln Leu Pro Met  
 515 520 525  
 Asp Glu Met Pro Asp Leu Thr Lys Leu Lys Ala Asp Thr His Lys Asn  
 530 535 540  
 Val Pro Ser Glu Val Ala Lys Leu Lys Gly Cys Pro Val Leu Tyr Glu  
 545 550 555 560  
 Gly Thr Phe Thr Leu Asp Lys Val Gly Asp Thr Phe Met Asp Met Glu  
 565 570 575  
 Ser Trp Gly Lys Gly Ile Val Phe Val Asn Gly Val Asn Ile Gly Arg  
 580 585 590  
 Tyr Trp Lys Val Gly Pro Gln Gln Thr Leu Tyr Val Pro Gly Val Trp  
 595 600 605  
 Leu Lys Lys Gly Glu Asn Lys Ile Val Ile Phe Glu Gln Leu Asn Glu  
 610 615 620  
 Thr Pro Gln Thr Glu Val Lys Thr Val Lys Thr Pro Val Leu Met Lys  
 625 630 635 640  
 Leu Lys Gly

<210> 8344  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 8344  
 Lys Cys Pro Phe Leu Ile Ser Asn Val Asp Phe Asp Cys Glu Asn Thr  
 1 5 10 15  
 His Asn Gly Met Thr Ala Asn Asn Lys Ser Lys Lys Ile Asp Phe Val  
 20 25 30  
 Arg Met Val Val Leu Ile Gly Leu Leu Met Lys Gln Ser Lys Glu Ile  
 35 40 45  
 Asn His Phe Pro Ala Lys Phe Pro Phe Val Phe Phe Lys Lys Ile Thr  
 50 55 60

<210> 8345  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 8345  
 Leu Gln Arg Ser His Ala Phe Leu Tyr Thr Lys Asp Ser Phe Glu Gly  
 1 5 10 15  
 Thr Gly Arg Asp Arg Arg Lys Glu Lys Ser Met Lys Ala Ala Arg Asn  
 20 25 30  
 Ser Gly Ile Cys Met Lys Leu Asp Asp Phe Thr Gly Val Leu Ser Leu  
 35 40 45  
 Glu His Leu Asp Val Asn Thr Met Val Tyr Leu Tyr Ser Glu Gln Gly  
 50 55 60  
 Glu Leu Ile Gly Lys Ile His Ser Thr Lys Ser Ser Ala Thr Phe Thr  
 65 70 75 80  
 Leu Pro Gln Lys Gly Met Tyr Val Leu Val Ile His Cys Leu Ser Tyr  
 85 90 95  
 Pro Val Glu Val Arg Arg Val Ile Tyr

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105

<210> 8346  
 <211> 331  
 <212> PRT  
 <213> B.fragilis

<400> 8346

Asp	Met	Val	Ser	Ala	Ile	Thr	Lys	Thr	Leu	Arg	Thr	Asn	Asn	Lys	Thr
1				5					10					15	
Val	Tyr	Val	Ser	Leu	Leu	Ser	Ile	Leu	Thr	Phe	Phe	Leu	Met	Leu	Asp
			20					25					30		
Tyr	Ile	Pro	Gly	Leu	Gln	Ala	Phe	Ser	Thr	Trp	Val	Thr	Pro	Pro	Leu
		35					40					45			
Ala	Leu	Phe	Leu	Gly	Leu	Ala	Phe	Ala	Leu	Thr	Cys	Gly	Gln	Ala	His
	50					55					60				
Pro	Lys	Phe	Asn	Lys	Lys	Thr	Ser	Lys	Tyr	Leu	Leu	Gln	Tyr	Ser	Val
65					70					75				80	
Val	Gly	Leu	Gly	Phe	Gly	Met	Asn	Leu	His	Ser	Ala	Leu	Ala	Ser	Gly
				85					90					95	
Lys	Glu	Gly	Met	Glu	Phe	Thr	Ile	Val	Ser	Val	Ile	Gly	Thr	Leu	Ile
			100					105					110		
Leu	Gly	Trp	Phe	Ile	Gly	Arg	Lys	Phe	Leu	Lys	Val	Asp	Arg	Asn	Thr
		115				120						125			
Ser	Tyr	Leu	Ile	Ser	Ser	Gly	Thr	Ala	Ile	Cys	Gly	Gly	Ser	Ala	Ile
	130					135					140				
Ala	Ala	Val	Gly	Pro	Val	Val	Lys	Ala	Asn	Asp	Ser	Glu	Met	Ser	Val
145					150					155					160
Ala	Leu	Ala	Thr	Ile	Phe	Ile	Leu	Asn	Ala	Leu	Ala	Leu	Phe	Ile	Phe
				165					170					175	
Pro	Val	Ile	Gly	His	Ala	Leu	Asn	Met	Ser	Gln	His	Glu	Phe	Gly	Thr
			180					185					190		
Trp	Ala	Ala	Ile	Ala	Ile	His	Asp	Thr	Ser	Ser	Val	Val	Gly	Ala	Gly
		195				200						205			
Ala	Ala	Tyr	Gly	Glu	Glu	Ala	Leu	Lys	Val	Ala	Thr	Thr	Ile	Lys	Leu
	210					215					220				
Thr	Arg	Ala	Leu	Trp	Ile	Ile	Pro	Met	Ala	Phe	Ala	Thr	Ser	Phe	Ile
225				230					235					240	
Phe	Lys	Ser	Lys	Gly	Gln	Lys	Ile	Ser	Ile	Pro	Trp	Phe	Ile	Phe	Phe
			245						250					255	
Phe	Val	Leu	Ala	Met	Ile	Val	Asn	Thr	Tyr	Leu	Leu	Gly	Ser	Val	Pro
		260					265						270		
Glu	Leu	Gly	Ala	Ala	Ile	Asn	Gly	Leu	Ala	Arg	Lys	Thr	Leu	Thr	Ile
		275				280						285			
Thr	Met	Phe	Phe	Ile	Gly	Ala	Ser	Leu	Ser	Leu	Asp	Val	Val	Lys	Ser
	290				295						300				
Val	Gly	Ile	Lys	Pro	Leu	Ile	Gln	Gly	Val	Leu	Leu	Trp	Val	Val	Ile
305				310						315					320
Ser	Leu	Ser	Thr	Leu	Ala	Tyr	Ile	Tyr	Trp	Phe					
				325					330						

<210> 8347  
 <211> 143  
 <212> PRT  
 <213> B.fragilis

<400> 8347

Lys	Lys	Tyr	Pro	Ile	Leu	Lys	Pro	Ile	Ile	Asn	Arg	Pro	Asn	Asn	Met
1				5					10					15	

Glu Asp Phe Lys Lys Lys Ile Gly Thr Asp Met Asn Asp Lys Glu Ile  
                   20                  25                  30  
 Val Phe Ser Lys Ser Ile Lys Ala Gly Lys Arg Ile Tyr Tyr Leu Asp  
           35                  40                  45  
 Val Lys Lys Asn Arg Lys Asp Glu Met Phe Leu Ala Ile Thr Glu Ser  
       50                  55                  60  
 Lys Lys Val Val Met Gly Glu Gly Asp Asp Ser Gln Val Ser Phe Glu  
 65                  70                  75                  80  
 Lys His Lys Ile Phe Leu Tyr Lys Glu Asp Phe Gly Lys Phe Met Ala  
                   85                  90                  95  
 Gly Leu Glu Gln Ala Ile Asn Phe Ile Asn Gln Asn Gln Glu Tyr Thr  
                  100                 105                 110  
 Glu Asp Ser Glu Ser Glu Glu Lys Val Glu Pro Glu Ser Glu Pro Glu  
          115                 120                 125  
 Thr Thr Val Leu Asp Ser Glu Ile Lys Ile Asp Ile Asp Phe Glu  
       130                 135                 140

<210> 8348  
 <211> 140  
 <212> PRT  
 <213> B.fragilis

<400> 8348

Tyr Thr Met Leu Lys Thr Ile Leu Ser Ile Ser Gly Lys Pro Gly Leu  
 1                  5                  10                  15  
 Tyr Lys Leu Ile Ser Gln Gly Lys Asn Met Leu Ile Val Glu Thr Ile  
           20                  25                  30  
 Asp Ala Ala Lys Lys Arg Phe Pro Ala Tyr Gly Asn Glu Lys Ile Ile  
          35                  40                  45  
 Ser Leu Ala Asp Ile Ala Met Tyr Thr Asn Asp Ser Glu Val Pro Leu  
       50                  55                  60  
 Arg Asp Val Leu Arg Ser Ile Lys Glu Lys Glu Asn Ala Ala Ile Ala  
 65                  70                  75                  80  
 Ser Ile Asp Val Lys Lys Ala Thr Ser Glu Gln Leu Arg Glu Tyr Leu  
                  85                  90                  95  
 Ala Glu Val Leu Pro Asp Phe Asp Arg Asp Arg Val Tyr Thr Asn Asp  
          100                 105                 110  
 Ile Lys Lys Leu Ile Leu Trp Tyr Asn Ile Leu Val Ser Asn Gly Ile  
          115                 120                 125  
 Thr Asp Phe Gly Glu Glu Thr Ala Val Glu Ala Glu  
       130                 135                 140

<210> 8349  
 <211> 274  
 <212> PRT  
 <213> B.fragilis

<400> 8349

Ser Phe Gln Pro Arg Gly Glu Asp Phe Leu Gly Tyr Arg Pro Gly Val  
 1                  5                  10                  15  
 Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn  
          20                  25                  30  
 Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala  
       35                  40                  45  
 Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys  
       50                  55                  60  
 Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys  
 65                  70                  75                  80  
 His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile



	85		90		95										
Phe	Ala	Leu	Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn	Gly	Ile	Gln	Phe
	100							105					110		
Glu	Leu	Asn	Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly	Lys	Cys	Tyr	Arg
	115							120					125		
Leu	Val	Ile	Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp	Leu	Asp	Leu	Trp
	130							135				140			
Glu	Gly	Glu	Tyr	Thr	Tyr	Arg	Cys	Ile	Leu	Thr	Asn	Asp	Tyr	Lys	Ser
	145					150					155				160
Ser	Thr	Arg	Asp	Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly	Lys	Glu
			165						170					175	
Arg	Ile	Phe	Asp	Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg	Leu	Pro
		180						185					190		
Lys	Ser	Phe	Met	Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Leu	Thr	Ala	Leu
	195						200					205			
Ile	His	Asn	Phe	Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr	Lys	Ala
	210					215					220				
Phe	Gly	Leu	Lys	Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe	Arg	Phe
	225				230					235					240
Ile	Ser	Val	Pro	Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr	Val	Leu
			245						250					255	
Asn	Ile	Tyr	Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu
		260						265					270		
Phe	Gly														

<210> 8350  
 <211> 868  
 <212> PRT  
 <213> B.fragilis

<400> 8350

Glu	Arg	Arg	Thr	Asn	Asp	Met	Asn	Phe	Asn	Asn	Phe	Thr	Ile	Lys	Ser
1				5				10						15	
Gln	Glu	Ala	Val	Gln	Glu	Ala	Ile	Asn	Leu	Ala	Gln	Ser	Arg	Gly	Gln
		20						25					30		
Gln	Ala	Ile	Glu	Thr	Ala	His	Ile	Leu	Tyr	Gly	Val	Met	Lys	Val	Gly
		35				40					45				
Glu	Asn	Val	Thr	Asn	Phe	Ile	Phe	Gln	Lys	Leu	Gly	Leu	Asn	Gly	Gln
	50					55					60				
Gln	Ile	Ser	Leu	Val	Leu	Asp	Lys	Gln	Ile	Asp	Ser	Phe	Pro	Lys	Val
	65				70					75				80	
Ser	Gly	Gly	Glu	Pro	Tyr	Leu	Ser	Arg	Glu	Ala	Asn	Glu	Val	Phe	Gln
				85					90					95	
Lys	Ala	Thr	Gln	Tyr	Ser	Lys	Glu	Met	Gly	Asp	Glu	Phe	Val	Ser	Leu
		100						105					110		
Glu	His	Leu	Leu	Leu	Ala	Leu	Leu	Thr	Val	Lys	Ser	Thr	Val	Ser	Thr
	115							120					125		
Ile	Leu	Lys	Asp	Ala	Gly	Met	Thr	Glu	Lys	Glu	Leu	Arg	Gly	Ala	Ile
	130					135					140				
Ser	Glu	Leu	Arg	Lys	Gly	Glu	Lys	Val	Thr	Ser	Gln	Ser	Ser	Glu	Asp
	145				150					155					160
Asn	Tyr	Gln	Ser	Leu	Glu	Lys	Tyr	Ala	Ile	Asn	Leu	Asn	Glu	Ala	Ala
			165						170					175	
Arg	Ser	Gly	Lys	Leu	Asp	Pro	Val	Ile	Gly	Arg	Asp	Glu	Glu	Ile	Arg
		180						185					190		
Arg	Val	Leu	Gln	Ile	Leu	Ser	Arg	Arg	Thr	Lys	Asn	Asn	Pro	Ile	Leu
	195						200					205			
Ile	Gly	Glu	Pro	Gly	Thr	Gly	Lys	Thr	Ala	Ile	Val	Glu	Gly	Leu	Ala

210	215	220
His Arg Ile Leu Arg Gly Asp Val Pro Glu Asn Leu Lys Asn Lys Gln		
225	230	235
Val Tyr Ser Leu Asp Met Gly Ala Leu Val Ala Gly Ala Lys Tyr Lys		240
	245	250
Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Val Asn Glu Val Lys Lys		255
	260	265
Ser Glu Gly Asn Ile Ile Leu Phe Ile Asp Glu Ile His Thr Leu Val		270
	275	280
Gly Ala Gly Lys Gly Glu Gly Ala Met Asp Ala Ala Asn Ile Leu Lys		285
	290	295
Pro Ala Leu Ala Arg Gly Glu Leu Arg Ser Ile Gly Ala Thr Thr Leu		300
305	310	315
Asp Glu Tyr Gln Lys Tyr Phe Glu Lys Asp Lys Ala Leu Glu Arg Arg		320
	325	330
Phe Gln Ile Val Gln Val Asp Glu Pro Asp Asn Leu Ser Thr Ile Ser		335
	340	345
Ile Leu Arg Gly Leu Lys Glu Arg Tyr Glu Asn His His His Val Arg		350
	355	360
Ile Lys Asp Asp Ala Ile Ile Ala Ala Val Glu Leu Ser Ser Arg Tyr		365
	370	375
Ile Thr Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Met Asp Glu		380
385	390	395
Ala Ala Ala Lys Leu Arg Met Glu Val Asp Ser Val Pro Glu Gly Leu		400
	405	410
Asp Glu Ile Ser Arg Lys Ile Lys Gln Leu Glu Ile Glu Arg Glu Ala		415
	420	425
Ile Lys Arg Glu Asn Asp Glu Pro Lys Leu Gln Thr Ile Gly Lys Glu		430
	435	440
Leu Ala Glu Leu Lys Glu Gln Glu Lys Ser Tyr Lys Ala Lys Trp Gln		445
	450	455
Ser Glu Lys Ser Leu Met Asp Ile Ile Gln Gln Asn Lys Val Glu Ile		460
465	470	475
Glu Asn Leu Lys Phe Glu Ala Asp Lys Ala Glu Arg Glu Gly Asn Tyr		480
	485	490
Gly Lys Val Ala Glu Ile Arg Tyr Gly Lys Leu Gln Glu Leu His Lys		495
	500	505
Glu Ile Glu Asp Thr Gln Lys Lys Leu His Glu Met Gln Gly Asp Thr		510
	515	520
Ala Met Ile Lys Glu Glu Val Asp Ala Glu Asp Ile Ala Asp Val Val		525
	530	535
Ser Arg Trp Thr Gly Ile Pro Val Ser Lys Met Met Gln Ser Glu Lys		540
545	550	555
Asp Lys Leu Leu His Leu Glu Glu Glu Leu His Gln Arg Val Ile Gly		560
	565	570
Gln Asp Glu Ala Ile Ala Ala Val Ser Asp Ala Val Arg Arg Ser Arg		575
	580	585
Ala Gly Leu Gln Asp Pro Lys Arg Pro Ile Gly Ser Phe Ile Phe Leu		590
	595	600
Gly Thr Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala Leu Ala Glu		605
	610	615
Phe Leu Phe Asp Asp Glu Thr Met Met Thr Arg Ile Asp Met Ser Glu		620
625	630	635
Tyr Gln Glu Lys His Ser Val Ser Arg Leu Val Gly Ala Pro Pro Gly		640
	645	650
Tyr Val Gly Tyr Asp Glu Gly Gly Gln Leu Thr Glu Ala Ile Arg Arg		655
	660	665
Lys Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Pro		670
	675	680
		685

Asp Val Phe Asn Ile Leu Leu Gln Val Leu Asp Asp Gly Arg Leu Thr  
 690 695 700  
 Asp Asn Lys Gly Arg Val Val Asn Phe Lys Asn Thr Ile Ile Ile Met  
 705 710 715 720  
 Thr Ser Asn Met Gly Ser Ser Tyr Ile Gln Ser Gln Met Glu Lys Leu  
 725 730 735  
 Asn Gly Ala Asn Asn Glu Glu Val Val Glu Glu Thr Lys Lys Glu Val  
 740 745 750  
 Met Asn Met Leu Lys Lys Thr Ile Arg Pro Glu Phe Leu Asn Arg Ile  
 755 760 765  
 Asp Glu Thr Ile Met Phe Leu Pro Leu Thr Glu Lys Asp Ile Lys Gln  
 770 775 780  
 Ile Val Leu Leu Gln Ile Lys Ser Val Gln Lys Met Leu Ala Gly Asn  
 785 790 795 800  
 Gly Val Glu Leu Glu Leu Thr Asp Ala Ala Leu Asp Phe Leu Ser Gln  
 805 810 815  
 Val Gly Tyr Asp Pro Glu Phe Gly Ala Arg Pro Val Lys Arg Ala Ile  
 820 825 830  
 Gln Arg Tyr Leu Leu Asn Asp Leu Ser Lys Lys Leu Leu Ala Gln Glu  
 835 840 845  
 Val Asp Arg Ser Lys Ala Ile Ile Val Asp Ala Gln Gly Asp Gly Leu  
 850 855 860  
 Val Phe Arg Asn  
 865

<210> 8351  
 <211> 92  
 <212> PRT  
 <213> B.fragilis

<400> 8351  
 Ala Val Leu Ala Gly Leu Tyr Glu Ile Cys Ile Glu Tyr Phe Arg Glu  
 1 5 10 15  
 Leu Ile Cys Arg Ile Gln Gly Phe Leu Ile Ile Phe Val Ala Ile Arg  
 20 25 30  
 Arg Asn Leu Lys Ser Gln Cys Tyr Glu Glu Tyr Tyr Thr Lys Arg Thr  
 35 40 45  
 Lys Ala Phe Leu Arg Tyr Tyr Ser Val Leu Glu Ile Trp Thr Ile Ser  
 50 55 60  
 Leu Phe Arg Asn Asn Val Thr Asn Ala His Ala Leu Leu Tyr Met Gln  
 65 70 75 80  
 Ile Tyr Ser Ile Glu Arg Gly Leu Leu Tyr Ile Ile  
 85 90

<210> 8352  
 <211> 431  
 <212> PRT  
 <213> B.fragilis

<400> 8352  
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe  
 1 5 10 15  
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro  
 20 25 30  
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr  
 35 40 45  
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly  
 50 55 60  
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser

65 70 75 80  
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala  
 85 90 95  
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly  
 100 105 110  
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile  
 115 120 125  
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp  
 130 135 140  
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys  
 145 150 155 160  
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile  
 165 170 175  
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val  
 180 185 190  
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu  
 195 200 205  
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys  
 210 215 220  
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr  
 225 230 235 240  
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu  
 245 250 255  
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn  
 260 265 270  
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile  
 275 280 285  
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu  
 290 295 300  
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg  
 305 310 315 320  
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe  
 325 330 335  
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe  
 340 345 350  
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn  
 355 360 365  
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu  
 370 375 380  
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val  
 385 390 395 400  
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr  
 405 410 415  
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly  
 420 425 430

&lt;210&gt; 8353

&lt;211&gt; 189

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8353

Ile Asn Lys Ala Cys Leu Gly Thr Lys Tyr Ser Met Glu Ile Trp Asn  
 1 5 10 15  
 Cys Asn Gln His Asn Asn Met Pro Asn Pro Lys Val Ser Gln Ser Ala  
 20 25 30  
 Tyr Leu Leu Leu Glu Glu Ser Ser Lys Met Asn Val Gly Asp Lys Ala  
 35 40 45  
 Pro Glu Leu Leu Gly Ile Asn Glu Lys Gly Glu Glu Val Arg Leu Asn

50 55 60  
 Asn Tyr Lys Gly Arg Lys Ile Val Leu Tyr Phe Tyr Pro Lys Asp Asn  
 65 70 75 80  
 Thr Ser Gly Cys Thr Ala Gln Ala Cys Ser Leu Arg Asp Asn Tyr Ala  
 85 90 95  
 Glu Leu Arg Lys Ala Gly Tyr Glu Val Ile Gly Val Ser Val Asp Asn  
 100 105 110  
 Glu Lys Ser His Gln Lys Phe Ile Glu Lys Asn Asn Leu Pro Phe Thr  
 115 120 125  
 Leu Ile Ala Asp Thr Asp Lys Lys Leu Val Glu Gln Phe Gly Val Trp  
 130 135 140  
 Gly Glu Lys Lys Leu Tyr Gly Arg Ala Tyr Met Gly Thr Leu Arg Thr  
 145 150 155 160  
 Thr Phe Leu Ile Asn Glu Glu Gly Val Ile Glu Arg Ile Ile Gly Pro  
 165 170 175  
 Lys Glu Val Lys Thr Lys Glu His Ala Ser Gln Ile Leu  
 180 185

<210> 8354  
 <211> 407  
 <212> PRT  
 <213> B.fragilis

<400> 8354

Ile Leu Asn Leu Lys Phe Leu Ile Lys Glu Met Gly Arg Val Leu Ile  
 1 5 10 15  
 Ile Gly Ala Gly Gly Val Gly Thr Val Val Ala His Lys Val Ala Gln  
 20 25 30  
 Asn Ala Asp Val Phe Thr Asp Ile Met Ile Ala Ser Arg Thr Lys Ser  
 35 40 45  
 Lys Cys Asp Asp Ile Val Lys Ala Ile Gly Asn Pro Asn Ile Lys Thr  
 50 55 60  
 Ala Gln Val Asp Ala Asp Asn Val Asp Glu Leu Val Ala Leu Phe Asn  
 65 70 75 80  
 Asp Phe Lys Pro Glu Met Val Ile Asn Val Ala Leu Pro Tyr Gln Asp  
 85 90 95  
 Leu Thr Ile Met Glu Ala Cys Leu Lys Ala Gly Val Asn Tyr Leu Asp  
 100 105 110  
 Thr Ala Asn Tyr Glu Pro Lys Asp Glu Ala His Phe Glu Tyr Ser Trp  
 115 120 125  
 Gln Trp Ala Tyr His Glu Arg Phe Lys Glu Ala Gly Leu Thr Ala Ile  
 130 135 140  
 Leu Gly Cys Gly Phe Asp Pro Gly Val Ser Gly Ile Tyr Thr Ala Tyr  
 145 150 155 160  
 Ala Ala Lys His Tyr Phe Asp Glu Ile Gln Tyr Leu Asp Ile Val Asp  
 165 170 175  
 Cys Asn Ala Gly Asn His His Lys Ala Phe Ala Thr Asn Phe Asn Pro  
 180 185 190  
 Glu Ile Asn Ile Arg Glu Ile Thr Gln Asn Gly Arg Tyr Tyr Glu Asn  
 195 200 205  
 Gly Gln Trp Val Thr Thr Gly Pro Leu Glu Ile His Lys Asp Leu Thr  
 210 215 220  
 Tyr Pro Asn Ile Gly Pro Arg Asp Ser Tyr Leu Leu Tyr His Glu Glu  
 225 230 235 240  
 Leu Glu Ser Leu Val Lys Asn Phe Pro Thr Ile Lys Arg Ala Arg Phe  
 245 250 255  
 Trp Met Thr Phe Gly Gln Glu Tyr Leu Thr His Leu Arg Val Ile Gln  
 260 265 270  
 Asn Ile Gly Met Ala Arg Ile Asp Glu Ile Asp Tyr Asn Gly Gln Lys

275 280 285  
 Ile Val Pro Leu Gln Phe Leu Lys Ala Val Leu Pro Asn Pro Gln Asp  
 290 295 300  
 Leu Gly Glu Asn Tyr Glu Gly Glu Thr Ser Ile Gly Cys Arg Ile Arg  
 305 310 315 320  
 Gly Leu Lys Asp Gly Lys Glu Arg Thr Tyr Tyr Val Tyr Asn Asn Cys  
 325 330 335  
 Ser His Glu Glu Ala Tyr Lys Glu Thr Gly Met Gln Gly Val Ser Tyr  
 340 345 350  
 Thr Thr Gly Val Pro Ala Met Ile Gly Ala Met Met Phe Phe Lys Gly  
 355 360 365  
 Glu Trp Lys Arg Pro Gly Val Asn Asn Val Glu Glu Phe Asn Pro Asp  
 370 375 380  
 Pro Phe Met Glu Gln Leu Asn Lys Gln Gly Leu Pro Trp His Glu Val  
 385 390 395 400  
 Phe Asp Gly Asn Leu Glu Leu  
 405

<210> 8355  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 8355  
 His Val His Tyr Leu Phe Leu Gly Phe Phe His Tyr Phe Leu Val Val  
 1 5 10 15  
 Gly Ala Val Gln Phe Phe His Leu Ala Leu Tyr Val Ala Ala Ala His  
 20 25 30  
 Ile Gly Gly His Asn Asp Asp Cys Ile Phe Lys Val Tyr His Thr Ala  
 35 40 45  
 Phe Val Ile Cys Gln Pro Ser Val Ile Glu Tyr Leu Gln Gln Asp Ile  
 50 55 60  
 Lys Tyr Ile Arg Met Cys Phe Leu Asp Phe Ile Lys Gln Tyr Tyr Arg  
 65 70 75 80  
 Ile Gly Phe Ala Thr Asp Arg Leu Cys Gln Leu Ser Ala Phe Val Ile  
 85 90 95  
 Ser Tyr Ile Ser Arg Arg Arg Ser Asn  
 100 105

<210> 8356  
 <211> 243  
 <212> PRT  
 <213> B.fragilis

<400> 8356  
 Glu Met Asn Leu Glu Glu Val Leu Asn Tyr Arg Arg Ser Val Arg Val  
 1 5 10 15  
 Phe Asp Lys Thr Lys Pro Leu Asp Pro Glu Lys Val Lys His Cys Leu  
 20 25 30  
 Glu Leu Ala Thr Leu Ala Pro Asn Ser Ser Asn Met Gln Leu Trp Glu  
 35 40 45  
 Phe Tyr Gln Val Ile Gln Pro Glu Leu Leu Ala Lys Ile Ser Lys Ala  
 50 55 60  
 Cys Leu Asp Gln Thr Ala Thr Ser Thr Ala Ser Glu Val Val Val Phe  
 65 70 75 80  
 Val Thr Arg Gln Asp Leu Tyr Arg Ser Arg Ala Lys Phe Val Leu Asp  
 85 90 95  
 Phe Glu Arg Gly Asn Val Arg Arg Asn Ser Pro Lys Glu Arg Gln Glu  
 100 105 110

Lys Arg Ile Lys Asp Arg Glu Leu Tyr Tyr Gly Lys Leu Met Pro Phe  
 115 120 125  
 Leu Tyr Ala Arg Phe Phe Arg Ile Leu Gly Leu Leu Arg Ser Val Leu  
 130 135 140  
 Ala Lys Ala Ile Gly Leu Phe Arg Pro Ile Val Arg Glu Val Ser Glu  
 145 150 155 160  
 Ser Asp Met Arg Val Val Val His Lys Ser Cys Ala Leu Ala Ala Gln  
 165 170 175  
 Thr Phe Met Ile Ala Met Ala Asn Glu Gly Tyr Asp Thr Cys Pro Leu  
 180 185 190  
 Glu Gly Phe Asp Ser Lys Gln Met Lys Lys Leu Leu Lys Leu Pro His  
 195 200 205  
 Gly Ala Glu Val Asn Met Val Ile Ala Cys Gly Ile Arg Asp Gly Asn  
 210 215 220  
 Lys Gly Ile Trp Gly Glu Arg Gly Arg Val Pro Phe Asp Glu Val Tyr  
 225 230 235 240  
 His Arg Val

<210> 8357

<211> 210

<212> PRT

<213> B.fragilis

<400> 8357

Asn Asn Ser Leu Leu Met Ala Ile Lys Ile Gly Ile Thr Gly Gly Ile  
 1 5 10 15  
 Gly Ser Gly Lys Ser Val Val Ser His Leu Leu Glu Val Met Gly Val  
 20 25 30  
 Pro Val Tyr Ile Ser Asp Glu Glu Ser Lys Lys Val Val Ala Thr Asp  
 35 40 45  
 Pro Val Ile Arg Lys Glu Leu Cys Asp Leu Val Gly Glu Glu Val Phe  
 50 55 60  
 Ser Gly Gly Lys Leu Asn Lys Thr Leu Leu Ala Thr Tyr Leu Phe Ala  
 65 70 75 80  
 Ser Ser Thr His Ala Ser Gln Val Asn Gly Ile Ile His Pro Arg Val  
 85 90 95  
 Lys Glu His Phe Arg Gln Trp Ser Ser His Lys Glu Cys Leu Asp Ile  
 100 105 110  
 Ile Gly Met Glu Ser Ala Ile Leu Ile Glu Ser Gly Phe Ala Asp Glu  
 115 120 125  
 Val Asp Cys Ile Val Met Val Tyr Ala Pro Leu Glu Leu Arg Val Glu  
 130 135 140  
 Arg Ala Val Arg Arg Asp Asn Ala Ser Cys Glu Gln Ile Met Gln Arg  
 145 150 155 160  
 Ile Arg Ser Gln Met Ser Asp Glu Glu Lys Cys Glu Arg Ala Ser Phe  
 165 170 175  
 Val Ile Ile Asn Asp Gly Glu Lys Pro Leu Ile Pro Gln Ile Leu Glu  
 180 185 190  
 Leu Ile Ala Phe Leu Tyr Gln Lys Ile His Tyr Leu Cys Ser Ala Lys  
 195 200 205  
 Asn Asn  
 210

<210> 8358

<211> 83

<212> PRT

<213> B.fragilis

115 120 125  
 130 135 140  
 145 150 155 160  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240

&lt;400&gt; 8358

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe  
 1 5 10 15  
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met  
 20 25 30  
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu  
 35 40 45  
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu  
 50 55 60  
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser  
 65 70 75 80  
 Ser Ala Arg

&lt;210&gt; 8359

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8359

Lys Thr Asn Lys Thr Asp Tyr Phe Met Asn Leu Leu Thr Val Phe Phe  
 1 5 10 15  
 Gln Ala Pro Ala Ala Gly Pro Asp Gly Ser Leu Met Trp Ile Met Leu  
 20 25 30  
 Ile Ala Met Phe Val Ile Met Tyr Phe Phe Met Ile Arg Pro Gln Asn  
 35 40 45  
 Lys Lys Gln Lys Glu Ile Ala Asn Phe Arg Lys Ser Leu Gln Val Asn  
 50 55 60  
 Gln Asn Val Ile Thr Ala Gly Gly Ile His Gly Val Ile Lys Glu Ile  
 65 70 75 80  
 Asn Asp Asp Tyr Ile Val Leu Glu Ile Ala Ser Asn Val Lys Ile Lys  
 85 90 95  
 Ile Asp Lys Asn Ser Ile Phe Ala Asp Ala Ser Ala Ala Asn Ser Gln  
 100 105 110  
 Ser Ala Thr Lys  
 115

&lt;210&gt; 8360

&lt;211&gt; 178

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8360

Thr Phe Gly Asn Ser Arg Arg Asn Arg Gln Lys Leu Leu Phe Gly Arg  
 1 5 10 15  
 Tyr Arg His His Asp Glu Ser Val Gln Gln Lys Ile Ile Ile His Phe  
 20 25 30  
 Ser Ile His Asn Gln Met Pro Glu Ala Arg Ile Asp Lys Trp Met Trp  
 35 40 45  
 Ala Val Arg Ile Phe Lys Thr Arg Thr Ile Ala Ala Glu Ala Cys Lys  
 50 55 60  
 Lys Gly Arg Ile Ser Ile Asn Gly Ser Phe Val Lys Ala Ala Arg Met  
 65 70 75 80  
 Ile Lys Pro Gly Asp Val Ile Gln Val Lys Lys Pro Pro Ile Thr Tyr  
 85 90 95  
 Ser Phe Lys Val Leu Gln Ala Ile Glu Lys Arg Val Gly Ala Lys Leu  
 100 105 110  
 Val Ser Glu Met Met Glu Asn Val Thr Thr Pro Asp Gln Tyr Glu Leu  
 115 120 125



Leu Glu Met Ser Lys Ile Ser Gly Phe Ile Asp Arg Ala Arg Gly Thr  
 130 135 140  
 Gly Arg Pro Thr Lys Lys Asp Arg Arg Ser Ile Glu Glu Phe Thr Thr  
 145 150 155 160  
 Pro Glu Phe Met Asp Asp Phe Asp Phe Asp Phe Asp Phe Glu Glu Asp  
 165 170 175  
 Asn Glu

<210> 8361  
 <211> 423  
 <212> PRT  
 <213> B.fragilis

<400> 8361

Ser Leu Met Asn Gln Lys Arg Asn Gln Thr Lys Val Val Asn Val Phe  
 1 5 10 15  
 Thr Val Phe Met Val Met Leu Ile Leu Tyr Phe Ile Val Gly Leu Phe  
 20 25 30  
 Thr Val Ile Asn Gln Gln Phe Gln Ile Pro Leu Gln Thr Ala Met Leu  
 35 40 45  
 Pro His Asp Gly Asn Ile Thr Asn Ala Leu Val Thr Met Leu Asn Phe  
 50 55 60  
 Ser Trp Phe Leu Ala Tyr Pro Leu Ser Glu Gly Phe Gly Thr Arg Trp  
 65 70 75 80  
 Leu Glu Lys Tyr Gly Tyr Arg Lys Thr Ser Tyr Leu Ala Leu Leu Ile  
 85 90 95  
 Leu Ile Ala Gly Leu Ala Ile Tyr Glu Ala Ala Val Leu Phe His Ile  
 100 105 110  
 Tyr Thr Pro Met Gln Val Ser Ile Ile Gly Asn His Ile Ser Val Gly  
 115 120 125  
 Phe Phe Ile Phe Leu Ile Gly Ser Phe Val Ile Gly Val Ala Ala Thr  
 130 135 140  
 Ile Leu Gln Val Val Leu Asn Leu Tyr Leu Thr Val Cys Arg Ile Gly  
 145 150 155 160  
 Lys Thr Thr Ala Leu Gln Arg Gln Met Ile Gly Gly Thr Ser Asn Ser  
 165 170 175  
 Ile Gly Met Ala Ile Ala Pro Leu Val Ile Ser Tyr Leu Ile Phe His  
 180 185 190  
 Gly Thr Pro Leu His Asp Ile Val Thr Lys Gln Phe Ile Ile Pro Leu  
 195 200 205  
 Ile Ile Leu Ile Leu Ile Met Leu Ile Ile Thr Leu Val Gly Lys  
 210 215 220  
 Thr Gln Met Pro Ser Ile Asp Asn Val Arg Gln Ala Pro Gly Glu Lys  
 225 230 235 240  
 Phe Asp Lys Ser Val Trp Ser Phe Arg Asn Leu Lys Leu Gly Val Trp  
 245 250 255  
 Gly Ile Phe Phe Tyr Val Gly Ile Glu Val Ala Val Gly Ala Asn Val  
 260 265 270  
 Asn Met Tyr Ala Ser Glu Leu Gly Gly Ser Phe Ala Ser Asn Ala Thr  
 275 280 285  
 His Met Ala Ala Leu Tyr Trp Gly Leu Leu Leu Leu Gly Arg Phe Leu  
 290 295 300  
 Gly Ser Phe Ile Lys Gln Val Pro Ser Glu Lys Gln Leu Val Ile Ala  
 305 310 315 320  
 Ser Ile Gly Ala Ile Val Leu Leu Val Leu Ala Met Leu Thr Ala Asn  
 325 330 335  
 Pro Trp Ile Leu Thr Leu Ile Gly Phe Phe His Ser Ile Met Trp Pro  
 340 345 350

Ala Ile Phe Thr Leu Ala Thr Asp Gln Leu Gly Lys Tyr Thr Thr Lys  
 355 360 365  
 Ala Ser Gly Val Leu Thr Met Gly Val Ile Gly Gly Gly Ile Ile Pro  
 370 375 380  
 Leu Leu Gln Gly Ile Phe Ala Asp Val Met Gly Gly Asn Trp Leu Trp  
 385 390 395 400  
 Thr Trp Leu Leu Val Ile Ala Gly Glu Ala Tyr Ile Leu Tyr Tyr Gly  
 405 410 415  
 Leu Asn Gly Tyr Lys Gln His  
 420

<210> 8362  
 <211> 229  
 <212> PRT  
 <213> B.fragilis

<400> 8362

Thr Ile Met Lys Thr Met Lys Phe Ile Leu Ala Cys Val Leu Leu Leu  
 1 5 10 15  
 Ser Pro Leu Leu Cys Gln Ala Gln Lys Asn Leu Phe Asn Lys Tyr Asn  
 20 25 30  
 Asp Met Lys Gly Val Ser Ser Val Tyr Ile Ser Lys Ala Met Met Glu  
 35 40 45  
 Leu Asn Pro Asn Leu Phe Met Lys Asp Leu Tyr Ile Gly Lys Val Ala  
 50 55 60  
 Glu His Leu Asn Ser Val Gln Val Leu Ser Thr His Asp Asn Lys Val  
 65 70 75 80  
 Arg Glu Glu Met Ala Lys Asp Ile Arg Ser Leu Val Gln Ser Ser Lys  
 85 90 95  
 Tyr Glu Leu Leu Met Lys Gln Lys Ser Thr Val Ser Gly Ser Glu Val  
 100 105 110  
 Tyr Val Asn Arg Lys Gly Ser Lys Val Lys Glu Leu Ile Met Val Met  
 115 120 125  
 Asn Gly Ala Ser Ser Leu Lys Phe Val Tyr Met Glu Gly Asp Met Thr  
 130 135 140  
 Thr Asp Asp Ile Lys Lys Leu Met Leu Tyr Gln Ser Thr Ser Gln Asn  
 145 150 155 160  
 Phe Ile Ile Ser Gly Asp Leu Phe Tyr Ala Asn Asn Lys Pro Val Thr  
 165 170 175  
 Tyr Phe Lys Lys Gly Asn Ser Asp Asn Gln Lys Asp Met Ala Glu Leu  
 180 185 190  
 Ser Gly Thr Tyr Asn Leu Asn Ser Ile Asp Thr Asn Tyr Lys Glu Glu  
 195 200 205  
 Leu Ser Thr Leu Asn Asp Lys Leu Lys Arg Ile Asp Gln Gly Leu Lys  
 210 215 220  
 Asn Met Asn Ile Lys  
 225

<210> 8363  
 <211> 189  
 <212> PRT  
 <213> B.fragilis

<400> 8363

Lys Asp Met Lys Tyr Leu Ile Val Gly Leu Gly Asn Ile Gly Pro Glu  
 1 5 10 15  
 Tyr His Glu Thr Arg His Asn Ile Gly Phe Met Val Leu Asp Ala Leu  
 20 25 30  
 Ala Arg Ala Asn Asn Leu Ser Phe Thr Asp Gly Arg Tyr Gly Phe Thr

35 40 45  
 Thr Thr Leu Ser Val Lys Gly Arg Gln Met Ile Leu Leu Lys Pro Ser  
 50 55 60  
 Thr Phe Met Asn Leu Ser Gly Asn Ala Val Arg Tyr Trp Met Gln Lys  
 65 70 75 80  
 Glu Asn Ile Pro Leu Glu Asn Val Leu Ile Ile Val Asp Asp Leu Ala  
 85 90 95  
 Leu Pro Phe Gly Thr Leu Arg Leu Lys Ser Lys Gly Ser Asp Ala Gly  
 100 105 110  
 His Asn Gly Leu Lys His Ile Ala Thr Ile Leu Gly Thr Gln Asn Tyr  
 115 120 125  
 Ala Arg Leu Arg Phe Gly Ile Gly Asn Asp Phe Pro Arg Gly Gly Gln  
 130 135 140  
 Ile Asp Phe Val Leu Gly His Phe Thr Asp Glu Asp Trp Lys Thr Met  
 145 150 155 160  
 Asp Glu Arg Leu Glu Thr Ala Gly Glu Ile Ala Lys Ser Phe Cys Leu  
 165 170 175  
 Ala Gly Ile Asp Ile Thr Met Asn Gln Phe Asn Lys Lys  
 180 185

<210> 8364

<211> 361

<212> PRT

<213> B.fragilis

<400> 8364

Arg Pro Lys Asn Thr Leu His Lys Phe Tyr Lys Ser Ile Ile Met Ala  
 1 5 10 15  
 Lys Lys Glu Asp Glu Leu Asn Phe Glu Thr Asp Asn Asn Lys Met Ala  
 20 25 30  
 Ser Ser Glu Lys Leu Lys Ala Leu Gln Ala Ala Met Asp Lys Ile Glu  
 35 40 45  
 Lys Ser Phe Gly Lys Gly Ser Ile Met Lys Met Gly Glu Glu Val Val  
 50 55 60  
 Glu Gln Val Glu Val Ile Pro Thr Gly Ser Ile Ala Leu Asn Ala Ala  
 65 70 75 80  
 Leu Gly Val Gly Gly Tyr Pro Arg Gly Arg Ile Ile Glu Ile Tyr Gly  
 85 90 95  
 Pro Glu Ser Ser Gly Lys Thr Thr Leu Ala Ile His Ala Ile Ala Glu  
 100 105 110  
 Ala Gln Lys Ala Gly Gly Ile Ala Ala Phe Ile Asp Ala Glu His Ala  
 115 120 125  
 Phe Asp Arg Phe Tyr Ala Ala Lys Leu Gly Val Asp Val Asp Asn Leu  
 130 135 140  
 Phe Ile Ser Gln Pro Asp Asn Gly Glu Gln Ala Leu Glu Ile Ala Glu  
 145 150 155 160  
 Gln Leu Ile Arg Ser Ser Ala Ile Asp Ile Ile Val Val Asp Ser Val  
 165 170 175  
 Ala Ala Leu Thr Pro Lys Ala Glu Ile Glu Gly Asp Met Gly Asp Asn  
 180 185 190  
 Lys Val Gly Leu Gln Ala Arg Leu Met Ser Gln Ala Leu Arg Lys Leu  
 195 200 205  
 Thr Ser Ala Val Ser Lys Thr Arg Thr Thr Cys Ile Phe Ile Asn Gln  
 210 215 220  
 Leu Arg Glu Lys Ile Gly Val Met Phe Gly Asn Pro Glu Thr Thr Thr  
 225 230 235 240  
 Gly Gly Asn Ala Leu Lys Phe Tyr Ala Ser Val Arg Leu Asp Ile Arg  
 245 250 255  
 Gly Ser Gln Gln Ile Lys Asp Gly Glu Glu Val Ile Gly Lys Gln Thr

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260 265 270  
 Lys Val Lys Val Val Lys Asn Lys Val Ala Pro Pro Phe Arg Lys Ala  
 275 280 285  
 Glu Phe Asp Ile Met Phe Gly Glu Gly Ile Ser His Ser Gly Glu Ile  
 290 295 300  
 Ile Asp Leu Gly Ala Asp Leu Gly Ile Ile Lys Lys Ser Gly Ser Trp  
 305 310 315 320  
 Tyr Ser Tyr Asn Asp Thr Lys Leu Gly Gln Gly Arg Asp Ala Ala Lys  
 325 330 335  
 Gln Cys Ile Ala Asp Asn Pro Glu Leu Ala Glu Glu Leu Glu Gly Leu  
 340 345 350  
 Ile Phe Glu Lys Leu Arg Glu His Lys  
 355 360

&lt;210&gt; 8365

&lt;211&gt; 199

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8365

Leu Leu Arg Asn Tyr Asp Met Asp Glu Lys Ile Lys Phe Pro Ser Asn  
 1 5 10 15  
 Val Val Leu Ile Asp Ala Ala Phe Leu Asn Leu Val Val Thr Asp Leu  
 20 25 30  
 Lys Lys Tyr Phe Glu Lys Thr Leu Met Arg Glu Leu Gln Glu Ile Asp  
 35 40 45  
 Leu Ser Glu Leu Val Thr Tyr Ile Val Leu Asp Ala Gly Met Ala Val  
 50 55 60  
 Gly Asp Asn Gln Ile Gln Ile Leu Met Val Tyr Asp Lys Asp Ser Ala  
 65 70 75 80  
 Gln Leu Ser Asn Cys Arg Pro Ser Asp Leu Ser Ala Glu Leu Asn Gly  
 85 90 95  
 Val Ala Phe Lys Ser Gln Phe Gly Glu Phe Ser Phe Ala Ser Val Pro  
 100 105 110  
 Cys Glu Glu Met Val Ser Arg Glu Leu Tyr Leu Asp Leu Leu Ser  
 115 120 125  
 Ile Val Leu Asp Ser Ala Asp Val Glu Arg Leu Ile Leu Val Ser Phe  
 130 135 140  
 Asn Glu Glu Tyr Gly Asp Lys Val Met Glu Arg Leu Lys Gly Val Lys  
 145 150 155 160  
 Asn Lys Glu Thr Ile Gln Phe Arg Met Asn Glu Pro Glu Glu Ser Ile  
 165 170 175  
 Glu Gly Tyr Gln Trp Glu Met Leu Ala Tyr Pro Val Met Gln Ala Leu  
 180 185 190  
 Gly Ile Arg Gly Glu Glu Leu  
 195

&lt;210&gt; 8366

&lt;211&gt; 234

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8366

Tyr Ile Met Asp Ala Leu Lys Met Leu Ile Val Val Thr Gly Thr Asp  
 1 5 10 15  
 Met Tyr Ala Asp Gly Asn Leu Gln Thr Gly Leu Trp Leu Ser Glu Leu  
 20 25 30  
 Thr His Ile Tyr His Cys Ala Glu Glu Ala Gly Tyr Glu Ile Thr Val  
 35 40 45

Ala Ser Pro Lys Gly Gly Asn Val Pro Val Asp Pro Glu Ser Leu Lys  
 50 55 60  
 Pro Met Met Leu Asp Lys Leu Ser Lys Asp Tyr Trp Asp Asp Leu Glu  
 65 70 75 80  
 Phe Arg Arg Glu Leu Gln His Ala Lys Ser Leu Ala Glu Val Ser Gly  
 85 90 95  
 Gln Leu Phe Asp Cys Val Tyr Leu Ala Gly Gly His Gly Ala Met Tyr  
 100 105 110  
 Asp Phe Pro Asp Asp Thr Val Leu Gln Ala Ile Ile Glu Lys His Tyr  
 115 120 125  
 Glu Ser Asp Lys Ala Val Ala Ala Ile Cys His Gly Val Ser Gly Leu  
 130 135 140  
 Leu Asn Val Lys Leu Ser Gly Gly Glu Tyr Leu Ile Lys Asp Lys Lys  
 145 150 155 160  
 Ile Thr Gly Phe Ser Trp Phe Glu Glu Ser Leu Ala Gly Arg Lys Lys  
 165 170 175  
 Glu Val Pro Phe Asp Leu Glu Ala Ala Leu Glu Lys Arg Gly Ala Asp  
 180 185 190  
 Tyr Glu Lys Ala Leu Ile Pro Met Thr Ser Lys Val Val Val Asp Cys  
 195 200 205  
 Asn Leu Ile Thr Gly Gln Asn Pro Phe Ser Ser Lys Glu Met Ala Glu  
 210 215 220  
 Val Val Met Arg Gln Leu Ser Arg Glu Lys  
 225 230

<210> 8367

<211> 287

<212> PRT

<213> B.fragilis

<400> 8367

Phe Gly Lys Cys Ile Asn Phe Met Leu Phe Phe Tyr Ile Phe Ala Pro  
 1 5 10 15  
 Ile Phe Asn Leu Asn Ser Met Thr Met Lys Lys Val Leu Leu Ser Ile  
 20 25 30  
 Cys Met Val Ser Ala Val Phe Ala Met Ser Ser Cys Gly Ser Thr Lys  
 35 40 45  
 Glu Ala Ala Ser Leu Ser Ser Leu Asn Gly Glu Trp Asn Ile Ile Glu  
 50 55 60  
 Val Asn Gly Ser Ala Ile Val Pro Ala Glu Asn Gln Glu Leu Pro Phe  
 65 70 75 80  
 Ile Gly Phe Asp Thr Ala Thr Gly Lys Val Tyr Gly Asn Ser Gly Cys  
 85 90 95  
 Asn Arg Met Met Gly Ser Ile Asp Leu Asn Ser Lys Pro Gly Thr Ile  
 100 105 110  
 Asp Met Ser Arg Leu Gly Ser Thr Arg Met Ala Cys Pro Asp Met Thr  
 115 120 125  
 Thr Glu Gln Asn Val Leu Asn Ala Leu Gly Gln Val Lys Ser Tyr Lys  
 130 135 140  
 Lys Leu Gly Lys His Asn Met Ala Leu Cys Asn Ala Ser Asn Arg Pro  
 145 150 155 160  
 Val Val Val Leu Gln Lys Lys Ala Ser Asp Val Lys Leu Ser Ala Leu  
 165 170 175  
 Asn Gly Glu Trp Lys Ile Glu Glu Val Asn Gly Glu Ala Ile Pro Ser  
 180 185 190  
 Gly Met Glu Lys Gln Pro Phe Ile Asn Phe Asp Val Lys Lys Lys Ser  
 195 200 205  
 Ile His Gly Asn Ala Gly Cys Asn Leu Ile Asn Gly Gly Phe Glu Thr  
 210 215 220

Asp Lys Glu Asn Pro Arg Ser Ile Ser Phe Pro Asn Val Ile Ser Thr  
 225 230 235 240  
 Met Met Ala Cys Pro Asp Met Glu Val Glu Gly Lys Val Met Lys Ala  
 245 250 255  
 Ile Asn Glu Val Lys Ser Phe Asp Val Leu Ser Gly Gly Gly Ile Gly  
 260 265 270  
 Phe Tyr Ser Ala Asp Gly Thr Leu Val Met Val Leu Val Lys Lys  
 275 280 285

<210> 8368  
 <211> 196  
 <212> PRT  
 <213> B.fragilis

<400> 8368

Thr Ser Val Cys Tyr Cys His Gly Gln Glu Lys Arg Tyr Val Lys Asn  
 1 5 10 15  
 Leu Ile Asn Gly Ile Ile Met Lys Val Glu Glu Ile Glu Arg Leu Leu  
 20 25 30  
 Ala Glu Phe Tyr Glu Gly Thr Thr Thr Glu Ser Gln Glu Glu Val Leu  
 35 40 45  
 Arg Asn Tyr Phe Arg Thr Thr Glu Val Pro Gly His Leu Leu Lys Asp  
 50 55 60  
 Lys Glu Ile Phe Leu Asn Leu Cys Pro Asp Ala Asp Gln Asp Ile Glu  
 65 70 75 80  
 Val Pro Ala His Leu Glu Asp Lys Leu Asn Leu Leu Ile Asp Glu Met  
 85 90 95  
 Ala Glu Lys Glu Gln His Phe Phe Arg Pro Asn Asn Ser Lys Asn Ser  
 100 105 110  
 Trp Arg Trp Ile Gly Gly Val Ala Ala Thr Ile Leu Leu Leu Ile Gly  
 115 120 125  
 Ile Gly Tyr Gly Ile Asp Asn Leu Ser Lys Asn Val Cys Pro Pro Thr  
 130 135 140  
 Pro Gln Asp Thr Phe Ser Asp Pro Glu Glu Ala Tyr Arg Met Leu Gln  
 145 150 155 160  
 Ala Thr Leu Leu Glu Ile Ser Ala Asn Leu Asn Tyr Gly Leu Asn Glu  
 165 170 175  
 Val Lys Glu Ser Gln Ile Asp Met Arg Lys Ile His Gln Glu Val Arg  
 180 185 190  
 Asn Glu Ile Lys  
 195

<210> 8369  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

<400> 8369

Lys Lys Tyr Arg Met Lys Ile Lys Arg Leu Leu Val Leu Ala Val Leu  
 1 5 10 15  
 Pro Met Leu Cys Leu Ala Val Asn Ala Gln Asn Ser Ser Lys Asp Asn  
 20 25 30  
 Thr Pro Lys Lys Gly Asp Phe Thr Val Ala Ala Thr Val Gly Tyr Asn  
 35 40 45  
 Ser Tyr Thr Ser Val Thr Ala Pro Ser Gly Leu Leu Thr Asp Tyr Glu  
 50 55 60  
 Val Arg Ala Leu Ser Thr Asn Trp Ala Asp Lys Lys Leu Met Val Gly  
 65 70 75 80  
 Phe Glu Gly Gly Trp Phe Phe Lys Asp Gln Trp Lys Leu Asn Leu Gly

[illegible]

<400> 8370

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<210> 8371
<211> 340
<212> PRT
<213> B.fragilis
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<400> 8371

Ile	Lys	Pro	Met	Phe	Glu	Arg	Arg	Asn	Ile	Lys	Tyr	Ile	Tyr	Leu	Lys
1				5					10					15	
Leu	Ser	Arg	Lys	Ile	Lys	Asp	Phe	Leu	Leu	Ser	Asp	Lys	Ser	Arg	Glu
			20					25					30		
Phe	Leu	Ile	Phe	Leu	Phe	Phe	Phe	Phe	Ile	Ala	Gly	Gly	Phe	Trp	Leu
			35				40					45			
Leu	Gln	Thr	Leu	Asn	Asn	Asp	Tyr	Glu	Ala	Glu	Phe	Ser	Ile	Pro	Val
			50			55					60				
Arg	Leu	Lys	Gly	Val	Pro	Asn	His	Val	Val	Leu	Thr	Ser	Glu	Pro	Pro
65					70					75					80
Ser	Glu	Leu	Arg	Ile	Lys	Val	Lys	Asp	Lys	Gly	Thr	Val	Leu	Leu	Asn
				85					90					95	

Tyr Met Leu Gly Lys Ser Phe Phe Pro Val Asn Ile Asp Phe Ser Glu  
 100 105 110  
 Ser Lys Val Pro Asp Asn His Val Lys Ile Tyr Thr Ser Glu Leu Glu  
 115 120 125  
 Lys Lys Ile Ala Gly Gln Leu Asn Val Ser Thr Arg Leu Leu Ser Val  
 130 135 140  
 Lys Pro Asp Thr Leu Glu Tyr Ile Tyr Ser Thr Gly Lys Ser Lys Leu  
 145 150 155 160  
 Val Pro Val Lys Leu Glu Gly Lys Val Val Ala Gly Arg Gln Tyr Tyr  
 165 170 175  
 Ile Ser Asp Thr Ile Tyr Ser Pro Asp Ser Val Leu Val Tyr Ala Pro  
 180 185 190  
 Val Ala Ile Leu Asp Thr Ile Thr Ala Ala Tyr Thr Gln Lys Val Asn  
 195 200 205  
 Phe Glu Asn Val Met Asp Thr Leu Lys Gln Arg Ile Ala Leu Ala Gly  
 210 215 220  
 Val Lys Gly Ala Lys Phe Val Pro Gly Ala Ile Asp Leu Thr Leu Pro  
 225 230 235 240  
 Val Asp Ile Tyr Thr Glu Lys Thr Val Glu Val Leu Leu Arg Gly Ile  
 245 250 255  
 Asn Phe Pro Ala Asp Lys Val Leu Arg Ala Phe Pro Ser Lys Val Gln  
 260 265 270  
 Val Thr Phe Gln Val Gly Leu Ser Arg Phe Arg Glu Val Asn Ala Ser  
 275 280 285  
 Asp Phe Val Val Asn Val Ser Tyr Glu Glu Leu Leu Lys Leu Gly Thr  
 290 295 300  
 Asp Lys Tyr Thr Val Lys Leu Lys Ser Leu Pro Arg Gly Val Ser His  
 305 310 315 320  
 Val Arg Ile His Pro Glu Gln Val Asp Phe Leu Ile Glu Gln Leu Ser  
 325 330 335  
 Ser Asp Gly Asn  
 340

<210> 8372  
 <211> 113  
 <212> PRT  
 <213> B.fragilis

<400> 8372

Lys Tyr Ile Phe Phe Ala Lys Asp Leu His Leu Thr Tyr Ser Phe Phe  
 1 5 10 15  
 Ala Phe Phe Val Thr Lys Phe Leu Leu Arg Leu Lys Asp Ile Asn  
 20 25 30  
 Ile Asp Lys Asn Glu His Met Asp Thr Glu Ser Phe Lys Arg Glu Phe  
 35 40 45  
 Leu Pro Tyr His Arg Lys Leu Tyr Cys Val Ala Tyr Arg Leu Leu Glu  
 50 55 60  
 Asn Ala Ala Asp Ala Glu Asp Leu Val Gln Glu Ala Tyr Leu Lys Leu  
 65 70 75 80  
 Trp Asp Lys Arg Glu Gly Leu Ser Val Ile Ser Asn Pro Glu Ala Phe  
 85 90 95  
 Ser Val Thr Leu Val Lys Pro Lys Ile Arg Asn Tyr His Pro Ile His  
 100 105 110  
 Asp

<210> 8373  
 <211> 198  
 <212> PRT



&lt;213&gt; B.fragilis

&lt;400&gt; 8373

Gln Asn Ile Ile Met Lys Arg Arg Leu Arg Thr Leu Leu Leu Leu Leu  
 1 5 10 15  
 Leu Ile Ala Thr Arg Thr Leu Leu Ala Gln Asn Ser His Phe Ala Ser  
 20 25 30  
 Ser Ser Ser Pro Gly Ser Leu Ser Pro Asp Glu Glu Thr Asp Phe Ile  
 35 40 45  
 Thr Thr His Phe Pro Leu Lys Gln Leu Cys Lys Trp Thr Pro Gly Met  
 50 55 60  
 Lys Phe Met Phe Ile Pro Asp Ser Ser Asp Glu Phe Val Pro Ile Leu  
 65 70 75 80  
 Cys Lys Tyr Glu Asp Gly Lys Glu Val Asp Asn Asp Leu Leu Lys Ser  
 85 90 95  
 Lys Thr Leu Glu Tyr Thr Gly Ser Glu Glu Thr Val His Glu Thr Tyr  
 100 105 110  
 Ile Gly Lys Ile Tyr Thr Ser Arg Phe Ile Phe Gln Cys Glu Asp His  
 115 120 125  
 Lys Tyr Tyr Tyr Glu Met Lys Asp Val Lys Leu Asn Asp Leu Cys Asp  
 130 135 140  
 Gln Asn Pro Tyr Ala Ser Ile Pro Ala Leu Val Tyr Leu Gln Asp Val  
 145 150 155 160  
 Asn Lys Ala Lys Glu Leu Leu Ile Gly Lys Thr Leu Tyr Thr Arg Thr  
 165 170 175  
 Thr Ile Ala Lys Thr Asp Asp Ala Asn Ser Tyr Ser Gly Tyr Arg Glu  
 180 185 190  
 Val Asn Ile Ala Lys Gly  
 195

&lt;210&gt; 8374

&lt;211&gt; 280

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8374

Lys Met Thr Ile Asp Asn Gln Thr Gly Leu Val Leu Glu Gly Gly Gly  
 1 5 10 15  
 Met Arg Gly Val Phe Thr Cys Gly Val Leu Asp Tyr Leu Met Asp His  
 20 25 30  
 Asp Ile Arg Phe Pro Tyr Thr Ile Gly Val Ser Ala Gly Ala Cys Asn  
 35 40 45  
 Gly Leu Ser Tyr Met Ser Arg Gln Arg Gly Arg Ala Lys Tyr Ser Asn  
 50 55 60  
 Ile Asp Leu Leu Glu Lys Tyr His Tyr Ile Gly Leu Lys His Leu Leu  
 65 70 75 80  
 Lys Lys Arg Asn Ile Leu Asp Phe Asp Leu Leu Phe Thr Glu Phe Pro  
 85 90 95  
 Glu His Ile Leu Pro Tyr Asp Tyr Gln Ala Tyr Phe Asp Ser Pro Glu  
 100 105 110  
 Arg Tyr Val Met Val Thr Thr Asn Cys Leu Thr Gly Glu Ala Asp Tyr  
 115 120 125  
 Phe Glu Glu Lys Lys Asp Lys Asn Arg Val Ile Asp Ile Val Arg Ala  
 130 135 140  
 Ser Ser Ser Leu Pro Phe Val Cys Pro Ile Ala Tyr Val Asp Gly Ile  
 145 150 155 160  
 Pro Met Leu Asp Gly Gly Ile Val Asp Ser Ile Pro Leu Gln Arg Ala  
 165 170 175  
 Ile His Asp Gly Tyr Arg Asn Asn Val Val Val Leu Thr Arg Asn His

			180					185					190				
Gly	Tyr	Arg	Lys	Glu	Asn	Lys	Asp	Ile	Arg	Ile	Pro	Pro	Phe	Val	Tyr		
		195					200					205					
Arg	Lys	Tyr	Pro	Lys	Met	Arg	Glu	Ala	Leu	Ser	Arg	Arg	Cys	Ala	Val		
	210				215						220						
Tyr	Asn	Glu	Gln	Leu	Glu	Met	Val	Glu	Arg	Met	Glu	Glu	Glu	Gly	Asp		
225				230				235						240			
Ile	Leu	Val	Ile	Arg	Pro	Gln	Lys	Pro	Val	Val	Val	Asp	Arg	Ile	Glu		
		245						250						255			
Arg	Asp	Ile	Gln	Lys	Leu	Thr	Asp	Leu	Tyr	Glu	Glu	Gly	Tyr	Glu	Cys		
	260							265					270				
Ala	Lys	Arg	Gln	Leu	Glu	Thr	Leu										
	275						280										

&lt;210&gt; 8375

&lt;211&gt; 221

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8375

Pro	Val	Lys	Ile	Thr	Thr	Ile	Asp	Val	Gly	Asn	Lys	Ser	Phe	Pro	Val		
1		5						10					15				
Lys	Ile	Thr	Phe	Ile	Asp	Arg	Lys	Gly	Val	Ser	Tyr	Tyr	Ile	Asn	Val		
	20						25					30					
Ala	Met	Ser	Arg	Thr	Asn	Ser	Gly	Met	Glu	Pro	Ala	Asp	Phe	Gln	Ala		
	35						40					45					
Glu	Lys	Arg	Ile	Asn	Tyr	Phe	Pro	Asn	Ala	Phe	Ser	Phe	Thr	Asn	Pro		
	50				55						60						
Asp	Val	Lys	Thr	Arg	Glu	Ser	Ile	Gln	Ser	Lys	Tyr	Ile	Gly	Gln	Ser		
65				70						75				80			
Val	Tyr	Pro	Gln	Lys	Thr	Ile	Arg	Val	Lys	Gln	Thr	Glu	Leu	Leu	Arg		
			85					90					95				
Tyr	Thr	Pro	Leu	His	Ile	Lys	Asp	Val	Gln	Pro	Glu	Lys	Ala	Gly	Thr		
	100						105						110				
Ser	Ala	Thr	Leu	Leu	Leu	Thr	Asp	Ile	His	Gly	Asn	Thr	Tyr	Gln	Val		
	115						120					125					
Lys	Val	Asp	Leu	Lys	Tyr	Asp	Pro	Ile	Leu	Lys	Asn	Glu	Asp	Phe	Ile		
	130					135					140						
Glu	Asp	Leu	Phe	Gly	Phe	Ser	Asp	Ile	Arg	Lys	Lys	Tyr	Pro	Asn	Ile		
145				150						155				160			
Ser	Glu	Ser	Asn	Trp	Leu	Met	Leu	Ala	Lys	Gly	Glu	Val	Lys	Pro	Gly		
			165					170						175			
Met	Thr	Thr	Glu	Glu	Cys	Lys	Leu	Ala	Ile	Gly	Glu	Pro	Ile	Glu	Ile		
	180							185					190				
Arg	Val	Arg	Thr	Asp	Ser	Arg	Phe	Glu	Thr	Trp	Leu	Tyr	Arg	Gly	Lys		
	195						200					205					
Ile	Leu	Glu	Phe	Glu	Asn	Gly	Ile	Leu	Leu	Arg	Ala	Lys					
	210					215					220						

&lt;210&gt; 8376

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8376

Cys	Cys	Gly	Ile	Lys	Val	Lys	Asn	Met	Cys	Phe	Asp	Leu	Leu	Arg	Ser		
1			5					10					15				
Gly	Lys	Tyr	Val	Leu	Ser	Arg	Gln	Ser	Val	Glu	Leu	Ser	Ala	Ala	Gln		
	20						25						30				

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<210> 8377
<211> 542
<212> PRT
<213> B.fragilis
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Lys	Ile	Glu	Ile	Met	Lys	Lys	Lys	Leu	Met	Val	Ala	Val	Leu	Leu	
1				5				10					15		
Gly	Ala	Leu	Ser	Leu	Gly	Ala	Cys	Val	Asp	Asn	Asn	Glu	Ser	Ala	Ser
			20					25				30			
Val	Glu	Ala	Val	Arg	Asn	Ala	Lys	Ala	Lys	Gln	Leu	Glu	Ser	Val	Ala
		35					40					45			
Asn	Met	Asn	Asn	Ala	Asn	Ala	Asp	Ala	Lys	Lys	Ala	Ile	Thr	Ala	Ala
	50					55					60				
Glu	Val	Ala	Ile	Lys	Glu	Ala	Glu	Ala	Ala	Tyr	Gln	Lys	Ala	Gln	Ala
65					70					75				80	
Glu	Leu	Ala	Gln	Ala	His	Ala	Asp	Gln	Gln	Lys	Ile	Leu	Leu	Glu	Lys
				85					90					95	
Ala	Gln	Ala	Ala	Leu	Glu	Ala	Glu	Leu	Glu	Ala	Ala	Lys	Ile	Asn	Ala
			100					105					110		
Glu	Ala	Glu	Leu	Asn	Asn	Ala	Lys	Ala	Ala	Leu	Glu	Ser	Ala	Lys	Ala
		115					120					125			
Ala	Leu	Ile	Ala	Ala	Leu	Asp	Gln	Val	Asp	Gln	Ala	Asn	Lys	Thr	Arg
	130					135					140				
Ile	Thr	Thr	Leu	Leu	Gly	Lys	Ala	Asn	Gly	Leu	Ala	Thr	Ile	Asn	
145					150					155				160	
Ala	Asp	Arg	Gln	Ser	Leu	Ile	Asp	Ala	Lys	Asp	Gln	Leu	Ala	Arg	Leu
				165					170					175	
Lys	Ala	Gly	Leu	Val	Ser	Val	Glu	Leu	Ser	Asn	Gln	Gln	Thr	Ile	Ala
		180						185					190		
Gly	Glu	Glu	Lys	Asn	Lys	Ala	Val	Ala	Gln	Ala	Leu	Ile	Ala	Glu	Tyr
		195					200					205			
Glu	Lys	Tyr	Ser	Thr	Lys	Asp	Lys	Ala	Asp	Ala	Glu	Lys	Ala	Ala	Gln
	210					215					220				
Glu	Ala	Asn	Ala	Lys	Leu	Thr	Ala	Leu	Gly	Gln	Thr	Arg	Asp	Glu	Lys
225					230					235				240	
Asn	Thr	Ala	Asp	Arg	Asn	Ala	Gln	Gln	Ala	Tyr	Trp	Glu	Ala	Tyr	Arg
			245						250					255	
Asn	Leu	Asn	Gly	Ser	Leu	Tyr	Val	Arg	Thr	Leu	Gln	Gln	Ala	Gly	Pro
		260						265					270		
Ser	Tyr	Tyr	Asp	Thr	Glu	Asp	Ile	Arg	Gly	Glu	Val	Val	Asn	Tyr	Thr
	275						280					285			
Asn	Asp	Asp	Ser	Thr	Thr	Gly	Thr	Val	Tyr	Pro	Ser	Ser	Tyr	Thr	Lys
	290					295					300				
Tyr	Ile	Pro	Asn	Leu	Asp	Arg	Ile	Asn	Glu	Ala	Ile	Thr	Asn	Gln	Thr
305					310					315					320

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

Arg Tyr Leu Ser Val Ser Lys Ala Ala Leu Ala Asp Ala Asn Lys Ala  
 325 330 335  
 Leu Thr Asp Ala Lys Ala Ser Asp Thr Tyr Lys Ser Leu Ala Lys Ala  
 340 345 350  
 Val Thr Asp Ala Gln Lys Lys Phe Asp Asp Ala Lys Thr Glu Ala Asp  
 355 360 365  
 Lys Asn Thr Ala Leu Ser Glu Leu Gly Ile Ala Glu Gly Asn Leu Ser  
 370 375 380  
 Ala Tyr Ile Gln Pro Leu Glu Asp Ala Val Asp Ser Ala Thr Ala Arg  
 385 390 395 400  
 Val Glu Lys Gly Glu Asn Ser Leu Lys Glu Tyr Asn Asp Ala Leu Ala  
 405 410 415  
 Ala Val Ser Gly Asp Asn Ala Thr Ala Tyr Ala Asn Leu Leu Thr Ala  
 420 425 430  
 Met Asp Asn Ala Val Lys Ala Arg Val Glu Thr Leu Ile Ala Tyr Tyr  
 435 440 445  
 Lys Ala Asp His Asn Tyr Ser Val Gln Asn Thr Leu Ala Tyr Thr Leu  
 450 455 460  
 Gln Thr Ile Ala Asp Gly Leu Ala Asp Tyr Asp Gln Leu Ile Leu Val  
 465 470 475 480  
 Gln Lys Gln Ala Ile Ala Ala Ala Asp Glu Asn Ile Ala Asn Ala Ala  
 485 490 495  
 Ser Val Val Ser Lys Glu Gln Ala Ile Ala Asn Gln Glu Lys Thr Ile  
 500 505 510  
 Ala Asp Leu Glu Asn Ser Leu Ala Val Asn Glu Pro Ile Tyr Asn Asp  
 515 520 525  
 Tyr Leu Ala Gln Ile Lys Ala Leu Val Gly Asp Ser Ala Glu  
 530 535 540

&lt;210&gt; 8378

&lt;211&gt; 302

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8378

Ala Phe Ile Phe Met Ser Asp Phe Arg Leu Lys Val Phe Leu Ser Val  
 1 5 10 15  
 Ala Lys Asn Leu Ser Phe Thr Lys Ala Ser Gln Glu Leu Phe Val Ser  
 20 25 30  
 Gln Pro Ala Ile Thr Lys His Ile Gln Glu Leu Glu Thr Cys Tyr Gln  
 35 40 45  
 Val Arg Leu Phe Asp Arg Gln Gly Asn Lys Ile Ser Leu Thr Glu Ala  
 50 55 60  
 Gly Lys Leu Leu Gln Glu His Ser Glu Lys Ile Leu Glu Asp Tyr Lys  
 65 70 75 80  
 Arg Leu Glu Tyr Glu Met His Leu Leu His Asn Glu Tyr Ile Gly Asp  
 85 90 95  
 Leu Lys Leu Gly Ala Ser Thr Thr Ile Ser Gln Tyr Val Leu Pro Pro  
 100 105 110  
 Leu Leu Ala Asn Phe Ile Ala Lys Phe Pro Gln Val Asn Leu Ser Leu  
 115 120 125  
 Leu Asn Gly Asn Ser Arg Glu Ile Glu Ala Ala Leu Gln Glu His Arg  
 130 135 140  
 Ile Asp Leu Gly Leu Val Glu Gly Ile Cys Arg Leu Pro Asn Leu Arg  
 145 150 155 160  
 Tyr Thr Thr Phe Leu Gln Asp Glu Leu Val Ala Val Val His Thr Gly  
 165 170 175  
 Ser Lys Leu Ser Leu Pro Asp Glu Ile Thr Pro Glu Asp Leu Ser Arg  
 180 185 190

Ile Pro Leu Val Leu Arg Glu Arg Gly Ser Gly Thr Leu Asp Val Phe  
 195 200 205  
 Glu Arg Ala Leu Ser Glu His Asn Met Lys Leu Ser Ser Leu Asn Val  
 210 215 220  
 Leu Leu Tyr Leu Gly Ser Thr Glu Ser Ile Lys Leu Phe Leu Glu His  
 225 230 235 240  
 Thr Asp Cys Ile Gly Ile Val Ser Ile Arg Ser Ile Ser Arg Glu Leu  
 245 250 255  
 Leu Ser Gly Thr Phe Arg Val Ile Glu Ile Lys Gly Met Pro Met Leu  
 260 265 270  
 Arg Glu Phe Cys Phe Ala Gln Pro Gln Gly Gln Glu Ser Gly Leu Ser  
 275 280 285  
 Gln Val Leu Met Gln Phe Ala Met His His Asn Lys Lys Leu  
 290 295 300

<210> 8379

<211> 338

<212> PRT

<213> B.fragilis

<400> 8379

Asn Thr Ala Leu Lys Asn Val Ile Tyr Leu Cys Lys Leu Ile Lys Asn  
 1 5 10 15  
 Val Tyr Phe Cys Asn Ser Leu Ile Thr Val Leu Ile Lys Ile Met Ile  
 20 25 30  
 Asn Arg Val Leu Ile Arg Leu Lys Ile Ile Gln Ile Val Tyr Ala Tyr  
 35 40 45  
 Tyr Gln Asn Gly Ser Lys Asn Leu Asp Ser Ala Glu Lys Glu Leu Phe  
 50 55 60  
 Phe Ser Leu Ser Lys Ala Tyr Asp Leu Tyr Asn Tyr Leu Leu Met Leu  
 65 70 75 80  
 Met Ile Ala Leu Thr Glu Tyr Ala Gln Lys Arg Ile Asp Thr Ala Lys  
 85 90 95  
 Ala Lys Leu Ala Pro Thr Lys Glu Glu Leu Tyr Pro Asn Met Lys Phe  
 100 105 110  
 Val Glu Asn Lys Phe Val Ala Gln Leu Glu Val Asn Lys Gln Leu Ser  
 115 120 125  
 Glu Phe Ile Ala Asn Gln Lys Arg Thr Trp Ala Asn Asp Gln Asp Phe  
 130 135 140  
 Ile Lys Glu Leu Tyr Glu Lys Ile Ile Ala Ser Asp Ile Tyr Lys Glu  
 145 150 155 160  
 Tyr Met Ala Ser Ser Asp Lys Ser Tyr Glu Ala Asp Arg Glu Leu Trp  
 165 170 175  
 Arg Lys Leu Tyr Lys Thr Phe Val Phe Asn Asn Asp Ser Leu Asp Gln  
 180 185 190  
 Val Leu Glu Asp Gln Ser Leu Tyr Trp Asn Asp Asp Lys Glu Ile Val  
 195 200 205  
 Asp Thr Phe Val Leu Lys Thr Ile Lys Arg Phe Glu Glu Lys Gln Gly  
 210 215 220  
 Ala Asn Gln Pro Leu Leu Pro Glu Phe Lys Asp Asp Glu Asp Gln Glu  
 225 230 235 240  
 Phe Ala Arg Arg Leu Phe Arg Arg Ala Ile Leu Asn Ala Asp Tyr Tyr  
 245 250 255  
 Arg His Leu Ile Ser Glu Asn Thr Lys Asn Trp Asp Leu Asp Arg Val  
 260 265 270  
 Ala Phe Met Asp Val Ile Ile Met Gln Cys Ala Leu Ala Glu Ile Leu  
 275 280 285  
 Ser Phe Pro Asn Ile Pro Val Ser Val Ser Leu Asn Glu Tyr Val Glu  
 290 295 300

Ile Ala Lys Leu Tyr Ser Thr Val Lys Ser Gly Ser Phe Ile Asn Gly  
 305 310 315 320  
 Thr Leu Asp Gly Ile Val Asn Gln Leu Lys Lys Glu Gly Lys Leu Thr  
 325 330 335  
 Lys Asn

<210> 8380  
 <211> 202  
 <212> PRT  
 <213> B.fragilis

<400> 8380  
 His Lys Lys Phe Gln Glu Met Arg Ser Ile Glu Val Lys Gly Thr Ala  
 1 5 10 15  
 Arg Thr Ile Ala Glu Arg Ser Ser Glu Gln Ala Arg Ala Leu Lys Glu  
 20 25 30  
 Ile Arg Asn Asn Gly Gly Val Pro Cys Val Leu Tyr Gly Gly Glu Glu  
 35 40 45  
 Val Val His Phe Thr Val Thr Asn Glu Gly Leu Arg Asn Leu Val Tyr  
 50 55 60  
 Thr Pro His Ile Tyr Val Val Asp Leu Val Ile Asp Gly Lys Lys Val  
 65 70 75 80  
 Asn Ala Ile Leu Lys Asp Ile Gln Phe His Pro Val Lys Asp Thr Ile  
 85 90 95  
 Leu His Val Asp Phe Tyr Gln Ile Asp Glu Ala Lys Pro Ile Val Met  
 100 105 110  
 Glu Val Pro Val Gln Leu Glu Gly Leu Ala Glu Gly Val Lys Ala Gly  
 115 120 125  
 Gly Lys Leu Ala Leu Gln Met Arg Lys Leu Lys Val Lys Ala Leu Tyr  
 130 135 140  
 Asn Ile Ile Pro Glu Lys Leu Thr Ile Asn Val Ser His Leu Gly Leu  
 145 150 155 160  
 Gly Lys Thr Val Lys Val Gly Glu Leu Ser Tyr Glu Gly Leu Glu Leu  
 165 170 175  
 Leu Asn Ala Lys Glu Ala Val Val Cys Ala Val Lys Leu Thr Arg Ala  
 180 185 190  
 Ala Arg Gly Ala Ala Ala Ala Ala Gly Lys  
 195 200

<210> 8381  
 <211> 108  
 <212> PRT  
 <213> B.fragilis

<400> 8381  
 Gln Glu Glu Phe Cys Tyr Lys Glu Ser Glu Lys Arg Ile Ser Lys Met  
 1 5 10 15  
 Lys Ile Phe Gly Glu Lys Asp Val Leu Leu Met Thr Glu Leu Lys Ile  
 20 25 30  
 Asp Thr Met Ser Gln Asn Glu Thr Thr Lys Leu Asp Ile Ile Val Glu  
 35 40 45  
 Val Leu Gly Glu Arg Glu Pro Glu Ile Arg Arg Leu Val Ile Leu Asp  
 50 55 60  
 Asp Arg Leu Arg Met Phe Ala Glu Ser Asn Asp Glu Asn Gly Pro Gly  
 65 70 75 80  
 Ile Pro Ile Glu Leu Val Ala Glu Trp Ala Thr Leu Leu Asn Lys Tyr  
 85 90 95  
 Tyr Pro Leu Ala Leu Glu Lys Arg Asn Met Met Asn

<400> 8382

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<210> 8383
<211> 132
<212> PRT
<213> B.fragilis
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<400> 8383

[illegible]

<210> 8384  
 <211> 612  
 <212> PRT  
 <213> B.fragilis

<220>  
 <221> UNSURE  
 <222> (596), (603), (604), (608), (610)  
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 8384

Lys	Ser	Lys	Pro	Cys	Glu	Leu	Val	Trp	Arg	Gln	Ala	Glu	Ile	Asn	Tyr
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Phe	Leu	Thr	Leu	Ser	Gln	Tyr	Lys	Ile	Met	Gln	Asn	Tyr	Phe	Ser	Ile
			20					25					30		
Gln	Leu	Leu	Arg	Val	Val	Lys	Ser	Ser	Leu	Trp	Leu	Thr	Ser	Lys	Lys
			35				40					45			
Ile	Pro	Lys	Thr	Met	Arg	Leu	Phe	Ile	Leu	Phe	Leu	Ile	Cys	Ser	Met
	50				55					60					
Ser	Phe	Val	His	Ala	Thr	Asp	Ser	Phe	Ala	Gln	Lys	Val	Glu	Ile	Ser
65					70				75					80	
Ile	Asp	Ala	Gln	Asn	Gln	Thr	Val	Glu	Lys	Val	Leu	Lys	Glu	Ile	Glu
			85					90					95		
Lys	Gln	Ser	Gly	Phe	Gly	Phe	Phe	Phe	Asn	Asn	Lys	His	Val	Asn	Leu
			100					105					110		
Lys	Arg	Val	Val	Ser	Val	Ser	Val	Asp	Lys	Ser	Asn	Ile	Phe	Lys	Val
			115				120					125			
Leu	Asp	Lys	Ile	Phe	Glu	Gly	Thr	Asp	Val	Lys	Tyr	Ser	Val	Leu	Asp
	130				135						140				
Lys	Lys	Ile	Ile	Leu	Ser	Thr	Glu	Met	Thr	Ser	Lys	Gln	Gln	Gln	Ala
145					150				155					160	
Val	Lys	Ile	Ser	Gly	Lys	Val	Val	Asp	Val	Asn	Gly	Glu	Pro	Val	Ile
				165				170					175		
Gly	Ala	Ser	Ile	Val	Glu	Lys	Gly	Thr	Thr	Asn	Gly	Thr	Val	Thr	Asn
			180					185					190		
Leu	Gln	Gly	Asp	Phe	Ser	Leu	Ser	Val	Ser	Ser	Asp	Lys	Ala	Val	Ile
		195					200				205				
Glu	Ile	Ser	Tyr	Ile	Gly	Tyr	Gln	Pro	Gln	Glu	Leu	Lys	Val	Ile	Ala
	210				215						220				
Gly	Lys	Pro	Leu	Asn	Val	Thr	Met	Lys	Glu	Asp	Ala	Gln	Ala	Leu	Glu
225				230					235					240	
Glu	Val	Val	Val	Val	Gly	Tyr	Gly	Ser	Gln	Lys	Lys	Val	Asn	Val	Ile
				245				250					255		
Gly	Ser	Ile	Ala	Ala	Val	Asp	Ser	Lys	Lys	Leu	Glu	Ser	Arg	Thr	Ala
			260				265						270		
Pro	Ser	Val	Ser	Asn	Met	Leu	Thr	Gly	Gln	Leu	Ser	Gly	Val	Thr	Ile
		275					280					285			
Thr	Gln	Ser	Ser	Gly	Asn	Pro	Gly	Gln	Asp	Gln	Gly	Thr	Ile	Arg	Val
	290				295						300				
Arg	Gly	Val	Gly	Ser	Phe	Gly	Ala	Thr	Pro	Asp	Pro	Leu	Val	Leu	Val
305				310					315					320	
Asp	Gly	Leu	Pro	Gly	Ser	Leu	Asn	Asp	Leu	Asn	Pro	Ala	Asp	Ile	Glu
			325				330						335		
Ser	Ile	Ser	Ile	Leu	Lys	Asp	Ala	Ser	Ser	Ala	Ala	Ile	Tyr	Gly	Ser
		340					345					350			
Arg	Ala	Ala	Asn	Gly	Val	Val	Leu	Val	Lys	Thr	Lys	Gly	Gly	Gln	Lys
	355						360					365			
Gly	Lys	Val	Thr	Val	Ser	Tyr	Asn	Gly	Tyr	Val	Gly	Phe	Asn	Gln	Ala



370 375 380  
 Thr Glu Leu Pro Glu Met Cys Asp Ser Trp Glu Tyr Ala Glu Leu Tyr  
 385 390 395 400  
 Asn Lys Ala Met Gly Lys Glu Val Tyr Ser Ala Glu Glu Ile Gln Lys  
 405 410 415  
 Tyr Lys Asp Gly Ser Asp Pro Tyr Asn Tyr Pro Asn Glu His Tyr Leu  
 420 425 430  
 Asp Lys Leu Gly Asn Lys Gly Leu Gln Thr Gly His Glu Leu Thr  
 435 440 445  
 Val Asn Gly Gly Asn Asp Lys Thr Gln Tyr Met Val Ser Phe Gly Tyr  
 450 455 460  
 Val Lys Gln Asn Gly Leu Met Glu His Asn His Tyr Asp Arg Tyr Asn  
 465 470 475 480  
 Gly Arg Val Asn Leu Thr Thr Glu Leu Ala Lys Lys Leu Thr Leu Thr  
 485 490 495  
 Thr Arg Leu Gly Gly Val Val Ser Lys Arg Ser Glu Pro Ser Thr Pro  
 500 505 510  
 Gly Gly Met Asp Ser Ala Gly Phe Lys Ala Phe Ser Ser Asn Ala Leu  
 515 520 525  
 Arg Phe Pro Gly Leu Trp Ala Thr Lys Leu Glu Asp Gly Ser Tyr Gly  
 530 535 540  
 Leu Gly Pro Lys Val Leu Gly Thr Pro Leu Ala Trp Leu Asp Ser Gly  
 545 550 555 560  
 Ser Phe Tyr His Glu Asn Phe His Lys Phe Arg Ser Asn Val Glu Leu  
 565 570 575  
 Ala Phe Thr Pro Val Lys Gly Leu Thr Leu Lys Ala Ser Ser Pro Arg  
 580 585 590  
 Gly Trp Ser Xaa Arg Ser Ala Leu Ser Phe Xaa Xaa Ser Tyr Pro Xaa  
 595 600 605  
 Gly Xaa Ser Ile  
 610

<210> 8385  
 <211> 385  
 <212> PRT  
 <213> B.fragilis

<400> 8385  
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 Leu Asn Phe Tyr Leu Arg Tyr Leu Asn Val Ile Leu Met Asn Arg Lys  
 20 25 30  
 Asn Tyr Leu Leu Ala Phe Ile Leu Cys Val Gln Thr Leu Phe Val Ser  
 35 40 45  
 Ala Gln Val Tyr Pro Val Arg Ala Lys Leu Thr Asp Glu Lys Ser Phe  
 50 55 60  
 Ser Met Ile Leu Leu Pro Asp Pro Tyr Ser Tyr Thr Met Val Asp Ala  
 65 70 75 80  
 His Tyr Ala Leu Phe Glu Leu Gln Thr Ala Trp Val Ala Asn Ser Ile  
 85 90 95  
 Glu Ser Leu Asn Ile Lys Gly Val Leu Cys Thr Gly Asp Leu Val Glu  
 100 105 110  
 Gln Asn Glu Ile Arg Ile Pro Asp Gly Val Asn Gly Asn Gln Thr Ser  
 115 120 125  
 Glu Glu Gln Trp Arg Ala Ala Ser Arg Ala Phe Glu Arg Leu Asp Gly  
 130 135 140  
 Lys Leu Pro Tyr Val Ile Cys Thr Gly Asn His Asp Tyr Gly Tyr Gln  
 145 150 155 160  
 Lys Ala Glu Asn Arg Leu Cys His Phe Pro Asp Tyr Phe Pro Ala Glu

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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<210> 8386
<211> 338
<212> PRT
<213> B.fragilis
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Ile	Thr	Asn	Met	Asn	Tyr	Glu	Asp	Ile	Asp	His	Leu	Leu	Pro	Arg	Tyr
1				5					10					15	
Cys	Glu	Gly	Leu	Ala	Thr	Glu	Glu	Glu	Cys	Arg	Gln	Val	Glu	Ser	Trp
			20					25					30		
Met	Glu	Glu	Ser	Glu	Asp	Asn	Arg	Lys	Ile	Val	Asp	Gln	Ile	Asn	Thr
			35				40					45			
Leu	Tyr	Ile	Ala	Val	Asp	Thr	Val	Asn	Val	Met	Arg	Lys	Val	Asp	Thr
	50					55					60				
Glu	Lys	Ala	Leu	Lys	Lys	Val	Ser	Ser	Arg	Met	Ile	Val	Arg	Lys	Thr
65					70					75					80
Thr	Trp	Trp	Glu	Trp	Met	Gln	Arg	Val	Ala	Ala	Ile	Leu	Phe	Ile	Pro
				85					90					95	
Leu	Ser	Val	Ala	Phe	Leu	Val	Gln	Tyr	Met	His	Asn	Gly	Lys	Ser	Ala
			100					105					110		
Val	Cys	Gln	Met	Met	Glu	Ile	Lys	Thr	Asn	Pro	Gly	Met	Thr	Thr	Ser
			115				120					125			
Val	Val	Leu	Pro	Asp	Ser	Thr	Val	Val	Tyr	Leu	Asn	Ser	Glu	Ser	Ser
						135					140				
Leu	Arg	Tyr	Pro	Ser	Val	Phe	Glu	Gly	Asp	Ile	Arg	Asn	Val	Glu	Leu
145					150					155					160
Lys	Gly	Glu	Ala	Tyr	Phe	Ala	Val	Ala	Lys	Asp	Leu	Lys	Lys	Lys	Phe
				165					170					175	
Val	Val	Ser	Ala	Pro	His	Ser	Ser	Gln	Ile	Glu	Val	Leu	Gly	Thr	His

180 185 190  
 Phe Asn Val Glu Ala Tyr Glu Asp Glu Pro Asp Val Ser Thr Thr Leu  
 195 200 205  
 Val Glu Gly Gln Val Cys Phe His Phe Ser Asp Lys Asp Tyr Leu Ala  
 210 215 220  
 Lys Lys Val Val Met Lys Pro Gly Gln Arg Leu Val Tyr Ser Ser Thr  
 225 230 235 240  
 Asn Gly Asp Val Gln Leu Tyr Ala Thr Ser Cys Leu Ser Glu Thr Ala  
 245 250 255  
 Trp Lys Asp Gly Lys Ile Ile Phe Asn Asn Thr Pro Leu Asp Val Ala  
 260 265 270  
 Leu Arg Met Leu Glu Lys Arg Phe Asn Val Thr Phe Lys Leu Lys Asn  
 275 280 285  
 Ala Arg Leu Lys Thr Asn Ala Phe Thr Gly Thr Phe Thr Glu Gln Arg  
 290 295 300  
 Leu Glu Arg Ile Leu Glu Tyr Phe Lys Ile Ser Ser Lys Ile Gln Trp  
 305 310 315 320  
 Arg Tyr Leu Glu Ser Pro Asp Ile Arg Asp Glu Arg Ser Ile Ile Glu  
 325 330 335  
 Val Tyr

<210> 8387  
 <211> 96  
 <212> PRT  
 <213> B.fragilis

<400> 8387  
 Arg Lys Ser Arg Ser Met Gly Lys Ser Gly Ser Ser Ser Asn Arg Ser  
 1 5 10 15  
 Val Thr Ile Ser Ser Gln Lys Glu Asp Ile Tyr Gln Gly Arg Asp Phe  
 20 25 30  
 Ala Asp Leu Glu Pro Gly Glu Phe Ile Gly Ser Ala Thr Arg Ala Asn  
 35 40 45  
 Val Arg Tyr Phe Lys Val Met Leu Gly Glu Phe Lys Glu Lys Asp Glu  
 50 55 60  
 Lys Pro Leu Pro Asp Val Arg Val Leu Glu Pro Gly Glu Ile Ser Gly  
 65 70 75 80  
 Asn Phe Ala Arg Ile Leu Glu Glu Val Arg Ser Leu Phe Pro Cys Glu  
 85 90 95

<210> 8388  
 <211> 101  
 <212> PRT  
 <213> B.fragilis

<400> 8388  
 Ala Pro Val Ile Gly Met Leu Met Ser Ile Ser Thr Arg Gln Phe Thr  
 1 5 10 15  
 Met Gln Asn Lys Val Pro Phe Val Tyr Phe Leu Asp Glu Met Thr Thr  
 20 25 30  
 Val Asn Ile Lys Ser Phe Glu Ser Leu Leu Ser Val Met Arg Glu Asn  
 35 40 45  
 Lys Val Ala Phe Val Leu Leu Thr Gln Ser Gly Ser Lys Leu Glu Asn  
 50 55 60  
 Leu Tyr Gly Lys Leu Asp Arg Ser Ser Val Glu Ala Asn Phe Gly Ile  
 65 70 75 80  
 Gln Phe Phe Gly Arg Thr Lys Asp Val Glu Ala Leu Lys Tyr Tyr Pro  
 85 90 95

Gln Met Phe Gly Lys  
100

<210> 8389  
<211> 216  
<212> PRT  
<213> B.fragilis

<400> 8389

Ala	Leu	Ser	Val	Pro	Ser	Ser	Pro	Val	Val	Lys	Thr	Ala	Gln	Met	Lys
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Lys	Phe	Thr	Arg	Glu	Cys	Met	Asp	Glu	Tyr	Ala	Arg	Asn	Phe	Tyr	Arg
			20					25					30		
Glu	Lys	Ile	Lys	Ser	Gly	Asp	Asp	Leu	Val	Trp	Tyr	Gly	Arg	Val	Glu
		35				40						45			
Thr	Glu	Arg	His	Tyr	Lys	Asn	Asp	Asp	Pro	Glu	Val	Lys	Ala	Gly	Arg
		50				55					60				
Ala	Lys	Ala	Gly	Asp	Lys	Lys	Pro	Gly	Leu	Gln	Leu	His	Val	His	Val
65					70					75				80	
Ile	Val	Ser	Arg	Met	Asp	Arg	Thr	Gln	Thr	Val	Ser	Leu	Ser	Pro	Leu
				85				90					95		
Ser	Lys	Ser	Arg	Gly	Asn	Arg	Gln	Val	Leu	Glu	Gly	Arg	Glu	Val	Val
			100					105					110		
Val	Gly	Phe	Asp	Arg	Ser	Gln	Trp	Ser	Ser	Arg	Cys	Ala	Ser	Arg	Phe
		115					120					125			
Asn	Gln	Ser	Tyr	Asp	Tyr	Phe	Pro	Asn	Tyr	Tyr	Ser	Arg	Asp	Glu	Ser
		130				135						140			
Leu	Arg	Lys	Tyr	Ser	Glu	Asn	Trp	Gln	Ala	Lys	Asn	Glu	Leu	Lys	Asn
145					150					155				160	
Glu	Ala	Val	Ser	Lys	Leu	Lys	Gln	Glu	Val	Leu	Lys	Gly	Glu	Leu	Lys
				165				170					175		
Glu	Glu	Arg	Arg	Leu	Tyr	Ala	Asn	Thr	Phe	Arg	Ile	Tyr	Arg	Phe	Val
			180					185					190		
Val	Asn	Pro	Lys	Lys	Ala	Ile	Ile	Gln	Glu	Leu	Lys	Arg	Leu	Gly	Thr
		195					200						205		
Asp	Leu	Leu	Ser	Gly	Arg	Asp	Leu								
		210				215									

<210> 8390  
<211> 439  
<212> PRT  
<213> B.fragilis

<400> 8390

Tyr	Ile	Met	Ser	Lys	Ile	Gln	Leu	Arg	Gln	Val	Tyr	Arg	Asp	Gln	Leu
1				5					10					15	
Tyr	Asn	Tyr	Arg	Pro	Thr	Trp	Ile	Leu	Arg	Trp	Gly	Ile	Thr	Ile	Phe
			20					25					30		
Phe	Val	Phe	Leu	Leu	Leu	Val	Ile	Ser	Val	Ser	Gly	Phe	Ile	Arg	Tyr
		35				40						45			
Pro	Asp	Ile	Val	Pro	Ala	Thr	Val	Glu	Ile	Thr	Thr	Ile	Asn	Pro	Pro
		50				55					60				
Ala	Asn	Leu	Ile	Ser	Lys	Val	Asn	Gly	Lys	Ile	Glu	Ile	Ile	Phe	Thr
65					70				75					80	
Glu	Glu	Gly	Glu	Ser	Ile	Thr	Lys	Gly	Gln	Val	Leu	Ala	Ile	Leu	Glu
				85				90						95	
Ser	Pro	Ala	Gln	Trp	Lys	Asp	Met	Lys	Ile	Leu	Asp	His	Tyr	Ile	Thr
			100					105					110		
Val	Leu	Glu	Asn	Thr	Ile	Gly	Lys	Asp	Ser	Leu	Ser	Val	Ile	Pro	Glu

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      115      120      125
Pro Asp Phe Leu Arg Asn Asp Leu Glu Leu Gly Glu Val Gln Gly Arg
  130      135      140
Tyr Ala Asp Leu Lys Leu Asn Tyr Thr Glu Leu Tyr Asn Phe Leu His
  145      150      155      160
Ser Gly Leu Phe Glu Glu Glu Val Leu Ser Leu Gln Glu Lys Lys Gln
      165      170      175
Ala Gln Lys Gln Leu Leu Val Gln Glu Asn Arg Lys Arg Glu Leu Leu
      180      185      190
Lys Thr Gln Ile Arg Leu Ala Asp Lys Glu Tyr Gln Arg Asp Ser Ile
      195      200      205
Leu Phe Val Lys Glu Val Ile Ser Glu Ser Glu Ile Glu Gln Arg His
      210      215      220
Gln Asn Arg Leu Gln Phe Gln Ser Ser Leu Val Asp Met Glu Val Asn
  225      230      235      240
Ile Leu Asn Ile Lys Ser Ser Leu Lys Gln Leu Arg Ser Asp Leu Lys
      245      250      255
Lys Ile Glu Leu Lys His Asn Thr Asp Arg Gln Glu Leu Thr Asn Lys
      260      265      270
Leu Leu Gln Ser Thr His Leu Leu Lys Ala Gln Thr Glu Thr Trp Lys
      275      280      285
Gln Asn Tyr Leu Ile Thr Thr Pro Ile Asp Gly Lys Val Ser Phe Thr
  290      295      300
Thr Tyr Trp Ser Lys Asn Gln Asn Val Lys Ser Gly Glu Leu Ile Phe
  305      310      315      320
Ser Val Val Pro Ile Asp Ser Met Thr Thr Lys Ala Arg Leu Gln Phe
      325      330      335
Pro Ile Gln Asn Ser Gly Lys Ile Lys Glu Gly Gln Gln Val Asn Ile
      340      345      350
Lys Leu Gln Asn Tyr Pro Tyr Gln Glu Phe Gly Met Leu Val Gly His
      355      360      365
Leu Ser Lys Ile Ser Glu Val Pro Asn Glu Leu Leu Tyr Ser Ala Asp
  370      375      380
Val Val Leu Asp Lys Gly Leu Ile Thr Ser Tyr Gly Lys Arg Leu Pro
  385      390      395      400
Lys Val Gln Gln Leu Lys Gly Asp Ala Glu Ile Leu Thr Asp Asp Leu
      405      410      415
Ser Leu Leu Met Arg Phe Phe Asn Pro Leu Arg Ala Ile Phe Asp His
      420      425      430
Arg Leu Arg Lys His Asn Gln
      435

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&lt;210&gt; 8391

&lt;211&gt; 441

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8391

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Leu Cys Met Ser Met Asn Lys Gln Met His Ile Ser Asn Gly Asn Lys
1      5      10      15
Arg Ile Leu Gln Ile Ala Val Pro Ser Ile Ile Ser Asn Ile Thr Val
      20      25      30
Pro Leu Leu Gly Leu Val Asp Val Thr Ile Val Gly His Leu Gly Ser
      35      40      45
Ala Ala Tyr Ile Gly Ala Ile Ala Val Gly Gly Met Leu Phe Asn Ile
      50      55      60
Ile Tyr Trp Ile Phe Gly Phe Leu Arg Met Gly Thr Ser Gly Met Thr
  65      70      75      80
Ser Gln Ala Phe Gly Gln Arg Asn Leu Glu Glu Val Thr Lys Leu Leu

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85 90 95  
 Leu Arg Ser Val Gly Val Gly Leu Phe Ile Ala Leu Cys Leu Met Thr  
 100 105 110  
 Leu Gln Tyr Pro Ile Gln Lys Ala Ala Phe Ala Phe Ile Gln Thr Ser  
 115 120 125  
 Asp Glu Val Glu Arg Leu Ala Thr Leu Tyr Phe Arg Ile Cys Ile Trp  
 130 135 140  
 Gly Ala Pro Ala Met Leu Gly Leu Tyr Gly Phe Ala Gly Trp Phe Ile  
 145 150 155 160  
 Gly Met Gln Asn Ser Arg Phe Pro Met Tyr Ile Ala Ile Thr Gln Asn  
 165 170 175  
 Ile Val Asn Ile Leu Ala Ser Leu Cys Phe Val Phe Leu Phe Gly Met  
 180 185 190  
 Lys Val Glu Gly Val Ala Leu Gly Thr Leu Ile Ala Gln Tyr Ala Gly  
 195 200 205  
 Phe Leu Met Ala Leu Leu Leu Trp Leu Arg Tyr Tyr Lys Gln Leu Arg  
 210 215 220  
 Lys Arg Val His Trp Arg Gly Ile Trp Gln Lys Gln Ala Met Tyr Arg  
 225 230 235 240  
 Phe Phe Gln Val Asn Arg Asp Ile Phe Leu Arg Thr Leu Cys Leu Val  
 245 250 255  
 Ala Val Thr Met Phe Phe Thr Ser Ala Gly Ala Ala Gln Gly Glu Val  
 260 265 270  
 Val Leu Ala Val Asn Thr Leu Leu Met Gln Leu Phe Thr Leu Phe Ser  
 275 280 285  
 Tyr Ile Met Asp Gly Phe Ala Tyr Ala Gly Glu Ala Leu Ala Gly Arg  
 290 295 300  
 Tyr Ile Gly Ala Gly Asn Arg Met Glu Leu His Arg Thr Val Arg Gln  
 305 310 315 320  
 Leu Phe Gly Trp Gly Val Gly Leu Ser Ala Gly Phe Thr Leu Leu Tyr  
 325 330 335  
 Gly Ile Gly Gly Gln Ser Phe Leu Gly Leu Leu Thr Asn Glu Ser Ser  
 340 345 350  
 Val Ile Gln Glu Ala Asp Thr Tyr Phe Tyr Trp Val Leu Ala Ile Pro  
 355 360 365  
 Leu Ala Gly Phe Ser Ala Phe Leu Trp Asp Gly Ile Phe Ile Gly Ala  
 370 375 380  
 Thr Ala Thr Arg Gln Met Leu Phe Ser Met Phe Ile Ala Ser Ala Ser  
 385 390 395 400  
 Phe Phe Leu Thr Tyr Ile Phe Gln Glu Val Met Gly Asn His Ala  
 405 410 415  
 Leu Trp Met Ala Phe Ile Ile Tyr Leu Ser Leu Arg Gly Leu Val Gln  
 420 425 430  
 Ala Phe Leu Ala Lys Lys Ile Val His  
 435 440

<210> 8392  
 <211> 115  
 <212> PRT  
 <213> B.fragilis

<400> 8392  
 Lys Tyr Leu Phe Met Gly Leu Glu Asp Asp Phe Leu Leu Asn Asp Ala  
 1 5 10 15  
 Asp Asp Glu Lys Thr Ile Glu Phe Ile Arg Asn Tyr Leu Pro Gln Glu  
 20 25 30  
 Leu Lys Glu Lys Phe Ser Glu Asp Glu Leu Tyr Tyr Phe Leu Asp Leu  
 35 40 45  
 Ile Asp Glu Tyr Tyr Ser Glu Ser Gly Ile Leu Asp Val Gln Pro Asp

50                      55                      60  
 Ala Asp Gly Tyr Val Asp Ile Asp Leu Glu Gln Val Val Glu Phe Ile  
 65                      70                      75                      80  
 Val Lys Glu Ala Lys Lys Asp Glu Val Gly Glu Tyr Asp Pro Glu Asp  
                     85                      90                      95  
 Ile Leu Phe Val Val Gln Gly Glu Met Glu Tyr Gly Asn Phe Leu Gly  
                     100                      105                      110  
 Gln Val Glu  
                     115

<210> 8393

<211> 418

<212> PRT

<213> B.fragilis

<400> 8393

Leu Leu Leu Leu Asp Thr Ile Asp Ser Val Leu Ile Ile Ile Ser Leu  
 1                      5                      10                      15  
 Asp Tyr Tyr Ile Ile His Asn Ile Glu Leu Thr Leu Asn Ile Asn Lys  
                     20                      25                      30  
 Met Lys Lys Ile Asn Ala Ala Leu Val Ile Ser Leu Phe Val Met Thr  
                     35                      40                      45  
 Gly Cys Gly Gly Asn Lys Gln Leu Thr Asp Asp Cys Ile Thr Val Asp  
                     50                      55                      60  
 Val Ser Ala Asp Tyr Pro Lys Lys Glu Leu Ile Leu Gln Asp Phe Met  
 65                      70                      75                      80  
 Asp Val Glu Tyr Val Pro Leu Glu Thr Thr Asp Asp Phe Ile Thr Gln  
                     85                      90                      95  
 Gly Ile Val Lys Ala Thr Gly Lys Lys Ile Leu Leu Val Ala Asn Arg  
                     100                      105                      110  
 Ile Met Asp Gly Asn Ile Phe Val Phe Asp Arg Ala Thr Gly Lys Gly  
                     115                      120                      125  
 Leu Arg Lys Ile Asn Arg Leu Gly Gln Ser Gly Glu Glu Tyr Ser His  
                     130                      135                      140  
 Ile Thr Ser Ile Val Leu Asp Glu Asp Asn Asn Glu Met Phe Val Val  
 145                      150                      155                      160  
 Asp Tyr Pro Ala Arg Lys Ile Leu Val Tyr Asp Leu Tyr Gly Glu Phe  
                     165                      170                      175  
 Asn Arg Ser Leu Pro Phe Pro Asp Thr Cys Tyr Tyr Glu Phe Leu Ser  
                     180                      185                      190  
 Asp Tyr Asp Arg Asp His Leu Ile Gly Tyr Lys Ser Tyr Leu Pro Leu  
                     195                      200                      205  
 Ile Glu Thr Asp Glu Ser Cys His Val Leu Ile Ser Lys Lys Asp Gly  
                     210                      215                      220  
 Ser Val Thr Arg Lys Ile Gln Ile Pro Phe Lys Glu Leu Glu Thr Pro  
 225                      230                      235                      240  
 Val Val Thr Lys Asp Glu Ala Ile Val Thr Pro Val Phe Phe Leu Ile  
                     245                      250                      255  
 Thr Pro His Asp Ser Asn Cys Leu Leu Thr Lys Thr Ser Ser Asp Thr  
                     260                      265                      270  
 Ile Tyr Asn Tyr Leu Pro Asp Gly Thr Leu Ser Pro Phe Ile Val Arg  
                     275                      280                      285  
 Thr Pro Ser Ile His Ser Met Asp Pro Lys Val Phe Leu Phe Pro Thr  
                     290                      295                      300  
 Ile Ile Thr Asp Arg Tyr Tyr Phe Met Gln Thr Leu Asp Lys Lys Phe  
 305                      310                      315                      320  
 Asn Phe Glu Lys Gly Arg Gly Phe Pro Thr Asn Asp Leu Val Tyr Asp  
                     325                      330                      335  
 Lys Gln Glu Lys Ala Ile Phe Gln Tyr Thr Val Tyr Asn Asp Asp Phe

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340 345 350  
 Ser Asn Lys His Arg Val Ala Leu Gly Gln Gln Pro Glu Lys Ser Val  
 355 360 365  
 Asp Glu Glu Ile Val Thr Cys Arg Ala Leu Asn Ala Ser Asp Leu Val  
 370 375 380  
 Glu Ala Asn Glu Lys Gly Glu Leu Lys Gly Lys Leu Lys Glu Ile Ala  
 385 390 395 400  
 Ala Gly Leu Asn Glu Ser Asn Ser Val Ile Met Leu Ile Lys Arg  
 405 410 415  
 Lys Lys

<210> 8394  
 <211> 103  
 <212> PRT  
 <213> B.fragilis

<400> 8394  
 Ala Ala Asp Pro Arg Cys Pro Thr Ile Val Thr Ser Thr Ser Pro Asn  
 1 5 10 15  
 Asn Gly Thr Val Ile Leu Glu Ile Ile Glu Gly Thr Ala Ile Cys Arg  
 20 25 30  
 Ile Arg Leu Phe Pro Leu Leu Met Cys Ile Cys Leu Phe Ile Asp Met  
 35 40 45  
 Gln Ser Tyr Met Lys Asn Arg Glu Tyr Glu Asn Asp Val Asn Asn His  
 50 55 60  
 Val Ile Ile Leu Val Arg Asn Val Leu Asp Thr Gly Ile Asn Ile Ile  
 65 70 75 80  
 Phe Val Cys Ile Leu Lys Asp Ile Leu Gln Thr Ile Asn Lys His Arg  
 85 90 95  
 Ser Glu Val Ala Leu Ser Ile  
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<210> 8395  
 <211> 261  
 <212> PRT  
 <213> B.fragilis

<400> 8395  
 Arg Asn Leu Pro Lys Asn Tyr Val Pro Asn Met Met Pro Tyr Pro Glu  
 1 5 10 15  
 Ser Phe Pro Val Pro Leu Ile His Ile Ala Lys Ala Asp Ser Thr Asn  
 20 25 30  
 Gly Tyr Leu Asn Ala Leu Cys Glu Lys Glu Lys Val Ser Glu Leu Thr  
 35 40 45  
 Thr Val Val Ala Asp Phe Gln Thr Ala Gly Arg Gly Gln Arg Gly Asn  
 50 55 60  
 Ser Trp Glu Ser Glu Asp Gly Lys Asn Leu Met Phe Ser Phe Val Leu  
 65 70 75 80  
 Tyr Pro Thr Phe Leu Glu Ala Arg Lys Gln Phe Leu Leu Ser Gln Ile  
 85 90 95  
 Ala Ser Leu Ala Val Lys Glu Thr Leu Asp Leu Tyr Ile Gly Asp Val  
 100 105 110  
 Ser Ile Lys Trp Pro Asn Asp Ile Tyr Trp Lys Asp Lys Lys Ile Cys  
 115 120 125  
 Gly Met Leu Ile Glu Asn Asp Leu Met Gly Ile His Ile Ser Gln Ser  
 130 135 140  
 Ile Ala Gly Val Gly Ile Asn Ile Asn Gln Lys Glu Phe His Ser Ser  
 145 150 155 160



Ser	Gly	Ser	Thr	Gln	Ile	Ile	Met	Phe	Leu	Thr	Lys	Arg	Phe	Tyr	Ile
1				5					10					15	
Leu	Val	Leu	Val	Val	Ile	Leu	Leu	Leu	Gly	Gly	Gly	Tyr	Leu	Phe	Gly
			20					25					30		
Ser	Leu	Phe	Ile	Ile	Gly	Gln	Leu	Gly	Leu	Leu	Ala	Leu	Leu	Leu	Ala
		35					40					45			
Leu	Ala	Phe	Asp	Gly	Tyr	Leu	Leu	Tyr	Arg	Thr	Lys	Gly	Ile	Gln	Ala
	50					55					60				
Phe	Arg	Gln	Cys	Ala	Gly	Arg	Phe	Ser	Asn	Gly	Asp	Asp	Asn	Glu	Val
65					70				75					80	
Ser	Leu	Arg	Ile	Glu	Ser	Arg	Tyr	Ser	Tyr	Pro	Val	Arg	Leu	Ile	Val
				85					90					95	
Ile	Asp	Glu	Val	Pro	Val	Ile	Phe	Gln	Gln	Arg	Asn	Val	His	Phe	Glu
			100					105					110		
Leu	Ser	Leu	Leu	Pro	Asn	Glu	Gly	Lys	Thr	Leu	Thr	Tyr	Arg	Leu	Arg
		115					120					125			
Pro	Thr	Arg	Arg	Gly	Glu	Tyr	Gly	Phe	Gly	Phe	Ile	Arg	Val	Phe	Thr

130 135 140  
 Thr Thr Arg Ile Gly Leu Ile Ser Arg Arg Ala Thr Cys Gly Arg Pro  
 145 150 155 160  
 Glu Thr Val Lys Val Tyr Pro Ser Tyr Leu Met Leu His Arg Tyr Glu  
 165 170 175  
 Leu Leu Ala Met Ser Asp Asn Leu Thr Glu Leu Gly Ile Lys Arg Ile  
 180 185 190  
 Arg Arg Ala Gly His Gln Thr Glu Phe Glu Gln Ile Lys Glu Tyr Val  
 195 200 205  
 Lys Gly Asp Asp Tyr Arg Thr Ile Asn Trp Lys Ala Ser Ala Arg Arg  
 210 215 220  
 His Gln Leu Met Val Asn Val Tyr Gln Asp Glu Arg Ser Gln Gln Ile  
 225 230 235 240  
 Tyr Ser Val Ile Asp Lys Gly Arg Val Met Gln Gln Ala Phe Arg Gly  
 245 250 255  
 Met Thr Leu Leu Asp Tyr Ala Ile Asn Ala Ser Leu Val Leu Ser Tyr  
 260 265 270  
 Val Ala Met Arg Lys Asp Asp Lys Ala Gly Leu Val Thr Phe Asn Glu  
 275 280 285  
 Tyr Phe Asp Thr Phe Val Pro Ala Ser Lys Gln Val Gly Gln Met Gln  
 290 295 300  
 Thr Leu Leu Glu Asn Leu Tyr Lys Gln Glu Thr Thr Phe Gly Glu Thr  
 305 310 315 320  
 Asp Phe Ser Ala Leu Cys Gly His Leu Gly Lys His Val Asn Lys Arg  
 325 330 335  
 Ser Phe Leu Val Leu Tyr Thr Asn Phe Ser Asn Met Thr Ser Leu Asn  
 340 345 350  
 Arg Gln Leu Val Tyr Leu Gln Gln Leu Ala Arg Gln His Arg Val Leu  
 355 360 365  
 Val Val Phe Phe Glu Asp Ala Asp Leu Lys Glu Tyr Ile Ala Gly Lys  
 370 375 380  
 Ser Val Thr Thr Glu Glu Tyr Tyr Arg His Val Ile Ala Glu Lys Phe  
 385 390 395 400  
 Ala Phe Glu Lys Arg Leu Ile Val Ser Thr Leu Lys Gln His Gly Ile  
 405 410 415  
 Tyr Ser Leu Leu Thr Thr Pro Asp Lys Leu Ser Ile Asp Val Ile Asn  
 420 425 430  
 Lys Tyr Leu Glu Met Lys Ser Arg Gln Leu Leu  
 435 440

&lt;210&gt; 8398

&lt;211&gt; 288

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8398

Ser Ile Asn Thr His Asn Met Glu Trp Pro Lys Ser Lys Asn Asn Lys  
 1 5 10 15  
 Met Glu Glu Leu Leu Glu Arg Met Ser Gln Phe Glu Ala Asn Leu Ala  
 20 25 30  
 Gln Leu Ile Ser Thr Gly Ile Pro Asn His Thr Pro Ser Pro Ala Thr  
 35 40 45  
 Asp Glu Ala Thr Ser Ser Pro Asn Glu Gln Glu Gln Leu Ser Pro Glu  
 50 55 60  
 Gln Glu Glu Glu Met Lys Leu Lys Ile Gln Glu Leu Gln Gln Lys Glu  
 65 70 75 80  
 Glu Glu Leu Asn Leu Arg Ala Glu Lys Leu Asp Lys Leu Ala Lys Glu  
 85 90 95  
 Leu Glu Glu Arg Gln Gln Asn Leu Glu Asn Arg Asn Pro Asn Asp Glu

100	105	110
Arg Ser Ile Glu Pro Ala Thr His	Pro Asp His Ser Phe Pro Ser Gln	
115	120	125
Ile Gly Asp Gln Ile Asn Ala Leu Lys Lys Leu Leu Glu Asp Ser Ser		
130	135	140
Tyr Lys Asp Lys Ile Ile Lys Asp Leu His Glu Glu Leu Gln Ser His		
145	150	155
Asn Arg Asp Leu His Ala Glu Ile Val Lys Pro Leu Leu Lys Asn Met		160
165	170	175
Ile Lys Met His Glu Arg Leu Thr Lys Thr Tyr Lys Phe Tyr Glu Asn		
180	185	190
Thr Glu Ala Lys Ser Ser Pro Glu Thr Tyr Thr Arg Leu Leu Arg Glu		
195	200	205
Val Glu Asn Cys Lys Leu His Ile Gln Asp Ile Leu Glu Asp Glu Tyr		
210	215	220
Asp Leu Glu Tyr Phe Glu Pro Thr Ile Gly Ser Ala Tyr Ser Pro Lys		
225	230	235
Glu Gln Thr Ala Ile Arg Thr Val Ile Thr Asp Thr Pro Glu Gln Ala		
245	250	255
Gly Thr Ile Lys Glu Phe His Tyr Gly Gly Phe Arg Asn Thr Thr Thr		
260	265	270
Asn Lys Ile Phe Gln Pro Ser Thr Val Thr Val Tyr Lys Lys Ser Glu		
275	280	285

<210> 8399  
 <211> 240  
 <212> PRT  
 <213> B.fragilis

<400> 8399

Tyr Gln Leu Thr Thr Asp Arg Leu Met Asn Ile Ser Glu Leu Ser Ile		
1	5	10
Arg Arg Pro Val Leu Ser Thr Val Leu Thr Ile Ile Ile Leu Leu Phe		15
20	25	30
Gly Leu Ile Gly Tyr Asn Tyr Leu Gly Val Arg Glu Tyr Pro Ser Val		
35	40	45
Asp Asn Pro Ile Ile Ser Val Ser Cys Ser Tyr Pro Gly Ala Asn Ala		
50	55	60
Asp Val Ile Glu Asn Gln Ile Thr Glu Pro Leu Glu Gln Asn Ile Asn		
65	70	75
Gly Ile Pro Gly Ile Arg Ser Leu Ser Ser Val Ser Gln Gln Gly Gln		80
85	90	95
Ser Arg Ile Thr Val Glu Phe Glu Leu Ser Val Asp Leu Glu Thr Ala		
100	105	110
Ala Asn Asp Val Arg Asp Lys Val Ser Arg Ala Gln Arg Tyr Leu Pro		
115	120	125
Arg Asp Cys Asp Pro Pro Thr Val Ser Lys Ala Asp Ala Asp Ala Thr		
130	135	140
Pro Ile Leu Met Val Ala Leu Gln Ser Asp Lys Arg Ser Leu Leu Glu		
145	150	155
Leu Ser Glu Ile Ala Asp Leu Thr Val Lys Glu Gln Leu Gln Thr Ile		
165	170	175
Ser Asp Val Ser Ser Val Ser Ile Trp Gly Glu Lys Arg Tyr Ser Met		
180	185	190
Arg Leu Trp Leu Asp Pro Ile Lys Met Ser Gly Tyr Gly Ile Thr Pro		
195	200	205
Ile Asp Val Lys Asn Ala Val Asp Lys Glu Asn Val Glu Leu Pro Ser		
210	215	220
Gly Ser Ile Glu Gly Asn Pro Pro Glu Leu Ser Ile Arg Thr Trp Asp		

225

230

235

240

&lt;210&gt; 8400

&lt;211&gt; 662

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8400

Pro Thr Glu Thr Asp Met Lys Lys Ser Arg Cys Ile Lys Ser Tyr Ile  
 1 5 10 15  
 Trp Val Ala Phe Leu Leu Asn Thr Leu Ile Leu Phe Gly Cys Ile Gln  
 20 25 30  
 Pro Asn Asn Ser Arg Tyr Pro Asp Lys Ile His Glu Val Leu Lys Leu  
 35 40 45  
 Ser His Asn Asn Arg Lys Glu Ile Glu Lys Ala Leu Asp Phe Phe Ile  
 50 55 60  
 Asn Gln Lys Asp Ser Leu Lys Ile Arg Ser Ile Phe Phe Leu Val Gly  
 65 70 75 80  
 Asn Met Ala Asp Lys Tyr Ser Leu Thr Pro Ala Asn Glu Gln Asp Pro  
 85 90 95  
 Phe His Ser Ile Ile Leu Asn Asn His Ile Lys Glu Lys Glu Ala Trp  
 100 105 110  
 Asp Pro Gly Lys Ser Arg Leu Gly Met Ala Leu Asp Ser Val Tyr Lys  
 115 120 125  
 Thr Cys Thr Asp Pro Pro Arg Pro Lys Ile Val Arg Asp Ile Glu Val  
 130 135 140  
 Ile Thr Gly Asn Phe Leu Ile Asn Asn Val Glu Glu Ala Ile Lys Ile  
 145 150 155 160  
 Trp His Arg Thr Lys Lys Phe Thr Glu Cys Ser Phe Asp Asp Phe Cys  
 165 170 175  
 Glu Tyr Ile Leu Pro Tyr Arg Ile Gly Asn Glu Ser Leu Ser Ala Trp  
 180 185 190  
 Arg Glu Gln Ala Cys Gln Lys Phe Ser Tyr Leu Leu Asp Ser Ile Ser  
 195 200 205  
 Asp Pro Leu Glu Leu Thr Lys Ala Ile Val Gln Val Ser Gly Ile Tyr  
 210 215 220  
 Tyr Asn Ala Gly Met Ser Lys Tyr Pro Phe Phe Pro Thr Phe Ser Glu  
 225 230 235 240  
 Leu Asp Gln Leu His Trp Gly Ser Cys Asp His Leu Ala Ala Tyr Leu  
 245 250 255  
 Thr Phe Ser Leu Arg Ala Ile Gly Ile Pro Ser Thr Ile Asp Val Val  
 260 265 270  
 Pro Ala Trp Ala Asn Arg Gly Gly Gly His Ala Trp Asn Val Val Met  
 275 280 285  
 Asn Lys Asp Gly Lys Phe Val Asp Val Gly Phe Asn Gly Glu Gly His  
 290 295 300  
 Asn Ser Ile Ser Tyr Lys Ile Pro Lys Ile Tyr Arg Thr Gly Tyr Ser  
 305 310 315 320  
 Ser Asn Lys Gly Gly Ile Gly Tyr Leu Asp Pro Leu Trp Lys Asp Val  
 325 330 335  
 Thr Gly Glu Tyr Pro Met Pro Ile Ser Asp Ile Ala Leu Ser Gly Ser  
 340 345 350  
 Asp Ser Asp Met Lys Gly Asp Val Leu Leu Leu Cys Ile Phe Asn Asn  
 355 360 365  
 Lys Asp Trp Ile Pro Val Ala Val Ser Ala Thr Glu Asn Lys Lys Thr  
 370 375 380  
 Met Thr Phe Gly Asn Val Ala Arg Gly Ile Pro Phe Gly Asp Asn Lys  
 385 390 395 400  
 Ile Ala Gly Tyr Gln Asn Glu Gly Lys Gly Ile Val Tyr Leu Pro Ala

[illegible]

<400> 8401

Met	Asp	Lys	Thr	Leu	Leu	Lys	Leu	Glu	Ile	Gly	Lys	Trp	Asn	Glu	Ala
1				5					10					15	
Cys	Arg	Phe	Leu	Lys	Ser	Lys	Gln	Thr	Glu	Leu	Ser	Thr	Ala	Glu	Trp
			20					25					30		
Thr	Ala	Ile	Glu	Thr	Leu	Ala	Asp	Tyr	Trp	Arg	Lys	Lys	Phe	Asp	Pro
		35					40					45			
Asp	Ala	Thr	Ser	Glu	Cys	Met	Asp	Leu	Ile	Ser	Thr	Leu	Glu	Gln	Ser
	50					55					60				
Asp	Lys	Leu	His	Ser	Asn	Asn	Lys	Glu	Ile	Ile	Val	Trp	Ser	Lys	Glu
65				70					75					80	
Phe	Arg	Thr	Ile	Ala	Arg	Lys	Tyr	Tyr	Thr	Lys	Asp	Glu	Thr	Thr	Phe
			85					90					95		
Leu	Val	Phe	Gln	Asn	Ala	Leu	Lys	Glu	Leu	Tyr	Gln	Ser	Ser	Ala	Pro
			100					105					110		
Arg	Ser	Ser	Ala	Pro	Leu	Gln	Thr	Pro	Val	Asn	Ser	Glu	Ser	Gln	Asn
		115					120					125			
Ile	Ile	Leu	Lys	Gln	Asn	Ala	Lys	Lys	Trp	Val	Ser	Thr	Tyr	Ser	Gln
	130					135					140				
Leu	Tyr	Glu	Asn	Gln	Asn	Glu	Leu	Asp	Arg	Asp	Glu	Trp	Asn	Ala	Val

145	Arg	Phe	Leu	Ala	Asn	Phe	Trp	Lys	Asn	Gly	Thr	Phe	Asn	Glu	Thr	Ser
					165					170						175
Arg	Lys	Glu	Cys	Glu	Gln	Tyr	Ile	Ser	Ile	Leu	Ile	Ala	Ser	Asp	Lys	
			180					185						190		
Leu	His	Ser	Asn	Asn	Lys	Asn	Ile	Ile	Thr	Trp	Ser	Lys	Asp	Phe	Arg	
		195				200						205				
Gly	Ile	Ala	Lys	Thr	Tyr	Tyr	Thr	Lys	Asp	Ser	Lys	Thr	Phe	Glu	Gly	
	210					215						220				
Phe	Lys	Lys	Phe	Met	Thr	Lys	Tyr	Thr	Arg	Glu	Asn	Pro	Ile	Gln	Glu	
225					230					235					240	
Arg	Thr	Pro	Gln	Glu	Arg	Ile	Pro	Gln	Thr	Pro	Pro	Arg	Gln	Thr	Ser	
				245					250					255		
Pro	Ser	Ile	Glu	Ile	Thr	Gly	Leu	Val	Ile	Ala	Asn	Thr	Asp	Glu	Lys	
		260					265					270				
Gly	Asp	Pro	Ile	Pro	Ser	Asn	Gln	Ala	Glu	Leu	Asp	Thr	Arg	Ser	Cys	
	275					280						285				
Tyr	Leu	Gln	Pro	Arg	Ile	Asp	Tyr	Arg	Val	Leu	Arg	Gly	Gly	Ser	Ser	
	290					295					300					
Val	Asp	Ile	Trp	Tyr	Lys	Leu	Tyr	Ala	Pro	Asp	Arg	Thr	Leu	Met	Thr	
305					310					315					320	
Ala	Ser	Asn	Ser	Lys	Ser	Gly	Tyr	Thr	Trp	Tyr	Gly	Asn	Val	Pro	Leu	
				325					330					335		
Thr	Gly	Ser	Arg	Ser	Ala	Tyr	Pro	Leu	Asn	Gly	Phe	Gly	Ser	Met	Ser	
			340					345					350			
Gly	Asn	Val	Phe	Ser	Ala	Gly	Gln	Trp	Ile	Ile	Glu	Phe	Phe	Glu	Asn	
		355					360				365					
Asp	Leu	Gln	Ile	Ala	Thr	Tyr	Thr	Phe	Thr	Ile	Lys	Gln	His	Arg	Thr	
370						375					380					
Ser	Thr	Pro	Pro	Pro	Gln	Ser	Arg	Val	Thr	Pro	Pro	Pro	Pro	Pro	Arg	
385					390					395					400	
Thr	Pro	Ser	Asn	Arg	Arg	Thr	Ser	Thr	Val	Ser	Pro	Lys	Lys	Gly	His	
			405						410					415		
Gly	Gly	Leu	Trp	Ser	Phe	Leu	Ile	Ile	Ala	Ala	Ile	Ile	Gly	Phe	Cys	
		420						425					430			
Gly	Tyr	Gln	Tyr	Trp	Tyr	Lys	Pro	Met	Thr	Ile	Asp	Arg	Asp	Ala	Glu	
	435					440					445					
Arg	Thr	Tyr	Val	Tyr	Val	Ser	Ser	Leu	Leu	Gln	Arg	Ser	Asp	Lys	Asn	
	450					455					460					
Ala	Asn	Val	Glu	Tyr	Asn	Arg	Ile	Gln	Ser	Leu	Pro	Tyr	Gly	Ser	Glu	
465					470					475					480	
Leu	Ile	Thr	Tyr	Gln	Lys	Glu	Gly	Asp	Gly	Trp	Ser	Tyr	Ile	Arg	Ala	
				485				490						495		
Asn	Glu	Lys	Lys	Gly	Tyr	Val	Ser	Thr	Asn	Tyr	Thr	Leu	Ser	Lys	Thr	
		500						505					510			
Asp	Phe	Glu	Leu	Leu	Asn	Asn	Leu	Trp	Gly	Ser	Lys	Glu	Ala	Met	Glu	
	515					520						525				
Gly	Ala	Pro	Thr	Ala	Lys	Cys	Arg	Leu	Ala	Leu	Val	Asp	Phe	Ile	Lys	
	530					535					540					
Lys	Asn	Asn	Tyr	Lys	Thr	Gly	Thr	Gly	Gln	Trp	Gln	Leu	Phe	Ala	Gln	
545					550					555					560	
Pro	Ile	Glu	Val	Lys	Pro	Asn	Ala	Val	Leu	Tyr	Pro	Arg	Leu	Ala	Asn	
				565				570						575		
Gly	Tyr	Thr	Lys	Phe	Thr	Glu	Phe	Ala	Phe	Val	Leu	Ser	Asn	Ser	Ser	
			580				585						590			
Thr	His	Glu	Gly	Val	Leu	Ala	Ile	Tyr	Ser	Phe	Ala	Asp	Asp	Glu	Thr	
	595					600						605				
Pro	Val	Phe	Ile	Tyr	Gln	Glu	Gln	Thr	Thr	Glu	Asn	Ala	Lys	Ile	Lys	
	610					615					620					

145  
 165  
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 545  
 565  
 580  
 595  
 610

Asp Val Arg Tyr Tyr Pro Trp Lys Thr Asp Lys Tyr Lys Val Ile Tyr  
 625 630 635 640  
 Ala Thr Pro Asn Ala Met Val Ser Arg Ser Pro Gln Leu Pro Thr Asn  
 645 650 655  
 Gln Gln Pro Ser Lys Ala Lys Ser Glu Asn Gly Leu Lys Ile Thr Lys  
 660 665 670  
 Ala Leu Phe Gly Asn Thr Asp Lys Ser Tyr Asn Ile Leu Thr Gln Phe  
 675 680 685  
 Gly Thr Gln Leu Pro Thr Thr Gln Tyr Leu Ser Pro Arg Ile Phe  
 690 695 700  
 Tyr Glu Asn Pro Ala Gly Lys Ser Ser Val Val Ile Lys Tyr Lys Ile  
 705 710 715 720  
 Ile Thr Pro Gln Gly Asn Leu Met Thr Gly Thr Gly Ser Pro Ser Gly  
 725 730 735  
 Tyr Thr Asn Glu Gln Lys Val Thr Leu Asn Arg Ser Gly Tyr Ile Asn  
 740 745 750  
 Leu Ala Gly Trp Gly Asn Thr Thr Gly Asp Ala Tyr Thr Ser Gly Thr  
 755 760 765  
 Tyr Arg Ile Glu Phe Trp Ser Glu Gly Glu Leu Leu Tyr Ser Thr Gly  
 770 775 780  
 Val Gln Ile Gln Gly Asn Ser Glu Lys Ala Val Thr Val Ser Ser Asn  
 785 790 795 800  
 Pro Val Glu Cys Pro Ile Lys Ile Arg Thr Met Leu Phe Ala Asn Ser  
 805 810 815  
 Asn Asp Lys Gly Thr Ile Leu Glu Asp Tyr Gly Lys Pro Leu Tyr Gly  
 820 825 830  
 Asn Lys Leu Gln Tyr Leu Lys Pro Lys Ile Ile Tyr Ser Ser Leu Asn  
 835 840 845  
 Gly Ala Arg Asn Ile Thr Leu Tyr Ala Lys Ile Tyr Arg Pro Asn Gly  
 850 855 860  
 Val Leu Ile Ala Asn Lys Asn Ser Pro Asn Gly Tyr Thr Tyr Lys His  
 865 870 875 880  
 Gly Met Tyr Thr Pro Ala Val Gly Ala Asp Asn Asn Val Ser Tyr Leu  
 885 890 895  
 Thr Ser Trp Gly Ser Pro Glu Cys Asp Val Tyr Ser Pro Gly Thr Tyr  
 900 905 910  
 Gln Tyr Glu Ile Trp Tyr Glu Gly Ser Lys Ile Phe Ser Cys Gln Val  
 915 920 925  
 Ile Val His  
 930

<210> 8402

<211> 441

<212> PRT

<213> B.fragilis

<400> 8402

Gly Thr Ala Ala Val Cys His Cys Leu Arg Cys Asn Ser His Ser Val  
 1 5 10 15  
 Cys Leu Gly Tyr Tyr Glu Thr Leu Tyr Ser Ala Ile Met Glu Val Leu  
 20 25 30  
 Tyr Glu Ile Tyr Leu Ser Ile Arg Gln Asn Lys Ile Arg Thr Phe Leu  
 35 40 45  
 Ser Gly Phe Gly Ile Ser Trp Gly Ile Leu Ile Leu Val Val Leu Leu  
 50 55 60  
 Gly Thr Gly Lys Gly Phe Gln Asn Ser Val Met Asp Ile Phe Ser Ile  
 65 70 75 80  
 Phe Ala Gln Lys Ser Met Tyr Val Tyr Gly Gly Ala Thr Ser Met Lys  
 85 90 95

Tyr Lys Asn Ile Arg Glu Gly Glu Gln Leu His Phe Asp Leu His Phe  
 100 105 110  
 Leu Asn Arg Ile Lys Lys Gln Phe Pro Gly Ile Lys Ala Ile Ser Pro  
 115 120 125  
 Glu Ile Thr Gly Pro Tyr Ser Gln Val Met Asn Lys Ala Lys Ser Gly  
 130 135 140  
 Leu Phe Lys Ile Ile Gly Ile Asn Glu Asn Tyr Met Gly Ile Lys Ile  
 145 150 155 160  
 Leu Lys Ile Asn Glu Asp Gly Arg Tyr Phe Asn Lys Gly Asp Asp Glu  
 165 170 175  
 Asn Thr Arg Asn Val Thr Ile Ile Gly Glu Asn Val Ser Thr Thr Leu  
 180 185 190  
 Phe Asn Asn Gln Lys Ala Leu Gly Lys Ser Ile Asn Ile Ala Gly Ile  
 195 200 205  
 Asp Phe Lys Val Ile Gly Val Leu Lys Asn Asp Asp Ile Phe Ser Ala  
 210 215 220  
 Ser Glu Ile Asn Ser Val Tyr Val Pro Phe Ser Ser Tyr Ile Asn Cys  
 225 230 235 240  
 Ile Asp Asn Lys Thr Pro Leu Arg Ala Phe Cys Leu Tyr Leu Asn Lys  
 245 250 255  
 Glu Val Asp Ser Lys Arg Phe Glu Asn Glu Leu Arg Ala Phe Ile Ala  
 260 265 270  
 Asn Lys Tyr Gln Phe Ala Tyr Pro Asp Lys Gln Ala Leu Gln Ile Ile  
 275 280 285  
 Asn Phe Glu Thr Gln Thr Ser Ala Phe Glu Gly Leu Phe Asp Gly Leu  
 290 295 300  
 Lys Met Phe Ile Trp Ile Val Gly Ile Cys Phe Leu Ile Ser Gly Ile  
 305 310 315 320  
 Val Gly Val Ser Asn Ile Met Phe Val Val Ile Lys Glu Arg Ser Ser  
 325 330 335  
 Glu Ile Gly Ile Arg Lys Ala Val Gly Ala Thr Pro Lys Ser Ile Leu  
 340 345 350  
 Val Leu Met Leu Thr Glu Ser Val Ile Ile Thr Val Ile Ser Gly Ile  
 355 360 365  
 Ile Gly Leu Ile Ser Gly Ala Gly Ile Leu Glu Ile Ile Asn Trp Leu  
 370 375 380  
 Leu Glu Ser Ala Arg His Ala Thr Met Ile Lys His Val Glu Ile Asp  
 385 390 395 400  
 Ile Asn Val Ala Val Leu Ala Leu Val Ile Leu Ile Leu Ser Gly Val  
 405 410 415  
 Ile Ala Gly Ala Phe Pro Ala Met Lys Ala Ser Val Ile Gln Pro Ile  
 420 425 430  
 Asp Ala Ile Arg Asn Glu Asn Ile Gly  
 435 440

&lt;210&gt; 8403

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8403

Ser Glu Met Ala Glu Ser Thr Ile Ile Thr Gly Gln Phe Val Arg Ile  
 1 5 10 15  
 Ser Gln Val Pro Ala Ser Leu Gly Glu Arg Ile Leu Ala Arg Ile Ile  
 20 25 30  
 Asp Tyr Phe Leu Leu Phe Ile Tyr Ile Leu Ala Thr Ser Tyr Ile Leu  
 35 40 45  
 Gly Lys Leu Asn Ile His Ala Phe Ser Gly Ser Thr Phe Phe Leu Leu  
 50 55 60



Phe	Leu	Phe	Ile	Tyr	Leu	Pro	Val	Leu	Cys	Tyr	Ser	Leu	Leu	Cys	Glu
65					70					75					80
Val	Phe	Asn	Gln	Gly	Gln	Ser	Ala	Gly	Lys	Lys	Leu	Met	Asn	Ile	Arg
			85						90					95	
Val	Val	Lys	Ala	Asp	Gly	Thr	Thr	Pro	Ser	Leu	Ser	Ala	Tyr	Leu	Leu
			100					105					110		
Arg	Trp	Leu	Leu	Tyr	Gly	Ile	Asp	Val	Thr	Ile	Thr	Gly	Gly	Leu	Gly
		115					120					125			
Val	Leu	Val	Ile	Leu	Leu	Thr	Lys	Asn	Ser	Gln	Arg	Leu	Gly	Asp	Leu
	130					135					140				
Ala	Ala	Gly	Thr	Met	Val	Ile	Lys	Glu	Lys	Asn	Tyr	Arg	Lys	Ile	Gln
145					150					155					160
Val	Ser	Leu	Asp	Glu	Phe	Asp	Tyr	Leu	Thr	Lys	Gly	Tyr	His	Pro	Ser
			165					170						175	
Phe	Pro	Ser	Ala	Ala	Asp	Leu	Ser	Leu	Glu	Gln	Ile	Asn	Val	Ile	Ser
			180					185					190		
Lys	Ala	Leu	Glu	Leu	His	His	Lys	Asp	Arg	Thr	Arg	His	Ile	Ala	Gln
		195					200					205			
Leu	Ala	Pro	Lys	Val	Arg	Ala	Leu	Leu	Ser	Val	Asp	Gln	Thr	Asn	Ile
	210					215					220				
Asn	Asp	Glu	Lys	Phe	Leu	Gln	Thr	Val	Val	Arg	Asp	Tyr	Gln	Tyr	Tyr
225					230					235					240
Ala	Leu	Glu	Glu	Ile											
				245											

<210> 8404  
 <211> 602  
 <212> PRT  
 <213> B.fragilis

<400> 8404

Asn	Lys	Pro	Ala	Met	Lys	Asn	Lys	Val	Leu	Lys	Ile	Thr	Ala	Ala	Leu
1				5					10					15	
Leu	Phe	Leu	Leu	Pro	His	Ala	Gly	Leu	Asp	Asn	Asn	Arg	Phe	Pro	Val
			20					25				30			
Met	Leu	Phe	Leu	Phe	Tyr	Ile	Cys	Ser	Phe	Val	Phe	Phe	Ala	Thr	Thr
		35					40					45			
Trp	Ser	Gly	Met	Lys	Glu	Asp	Trp	Ser	Arg	Asn	Ser	Arg	Thr	Cys	Phe
	50					55					60				
Ile	Val	Ser	Gly	Ile	Val	Leu	Ser	Leu	Phe	Leu	Arg	Tyr	Val	Ser	Gly
65					70					75					80
Asn	Ile	Tyr	Gly	Thr	Tyr	Arg	Leu	Tyr	Thr	Met	Ala	Val	Leu	Trp	Ile
			85						90					95	
Leu	Phe	Phe	Ser	Phe	Tyr	Ala	Ala	Gln	Ser	Leu	Pro	Gly	Lys	Asn	Arg
			100					105					110		
Arg	Phe	Leu	Ala	Trp	Val	Val	Ile	Ala	Thr	Val	Ala	Val	Glu	Thr	Val
		115					120					125			
Leu	Gly	Ile	Ala	Gln	Ser	Ile	Gly	Leu	Leu	Glu	Asn	Ser	Asp	Pro	Gln
	130					135					140				
Phe	Ile	Ile	Gly	Gly	Ser	Met	Thr	Asn	Pro	Gly	Ala	Tyr	Ala	Gly	Tyr
145					150					155					160
Leu	Gly	Val	Thr	Thr	Pro	Leu	Ile	Leu	Ser	Leu	Leu	Val	Ser	Tyr	Lys
			165						170					175	
Lys	Asn	Lys	Arg	Phe	Glu	Asn	Ile	Cys	Tyr	Ile	Leu	Gly	Gly	Leu	Phe
			180					185					190		
Ile	Leu	Val	Cys	Tyr	Leu	Leu	Ile	Leu	Ser	Arg	Ser	Arg	Gly	Ala	Trp
		195					200					205			
Ile	Ala	Cys	Gly	Ala	Gly	Cys	Leu	Cys	Val	Leu	Cys	Tyr	Arg	Tyr	Ala
	210					215					220				

Arg Phe Leu Arg Gly Thr Asn Tyr Trp Ser Lys Lys Ala Ile Arg Thr  
 225 230 235 240  
 Pro Thr Ile Ile Leu Ser Ala Val Leu Ile Ile Ala Ser Gly Phe Phe  
 245 250 255  
 Val Phe Lys Met Lys Glu Asp Ser Ala Leu Gly Arg Ile Leu Val Trp  
 260 265 270  
 Lys Val Thr Leu Ser Thr Pro His Pro His Ala Ser Leu Leu Trp Gly  
 275 280 285  
 Asn Gly Ile Gly Tyr Phe Glu Ser Gln Tyr Gly Lys Trp Gln Ala Asp  
 290 295 300  
 Tyr Phe Arg Glu Lys Glu Gly Thr Glu Lys Glu Arg His Ile Ala Gly  
 305 310 315 320  
 Tyr Val Thr Thr Ala Tyr Asn Glu Phe Leu Glu Leu Gly Leu Glu Gln  
 325 330 335  
 Gly Ile Ile Val Thr Ala Cys Ile Ala Ala Leu Leu Val Met Ala Thr  
 340 345 350  
 Gly Thr Gly Trp Lys Asn Leu Ser Thr Ile Glu Leu Gly Ala Lys Ala  
 355 360 365  
 Ser Ile Val Ser Ile Thr Ile Leu Met Phe Cys Ser Tyr Pro Leu Lys  
 370 375 380  
 Val Leu Pro Thr Thr Leu Tyr Leu Met Phe Cys Leu Ser Val Ala Leu  
 385 390 395 400  
 Tyr Gly Lys Lys Arg Leu Leu Ser Thr Gly His Arg Met Ile Ser Asn  
 405 410 415  
 Gly Val Arg Ser Leu Ala Gly Pro Leu Ile Cys Val Phe Ala Leu Ala  
 420 425 430  
 Gly Met Ile Asn Ala Tyr Gly Tyr Phe Cys His Arg Gly Gln Gln  
 435 440 445  
 Arg Val Met Arg His Asp Leu Lys Gly Gly Ile Glu Met Tyr Lys Lys  
 450 455 460  
 Ala Gln Gly Ile Leu Arg Lys Asp Gly Ile Phe His Phe Tyr Leu Gly  
 465 470 475 480  
 Ser Ala Tyr Phe Leu Ser Ala Glu Tyr Gln Lys Ala Ile Glu Glu Leu  
 485 490 495  
 Ser Val Ser Cys Thr Gln Cys Ser Asn Pro Ser Ser Phe Ile Leu Leu  
 500 505 510  
 Gly Asn Ala Tyr Arg Glu Asn Gly Asp Thr Ala Lys Ala Ile Asp Ala  
 515 520 525  
 Tyr Thr Thr Ala Val Tyr Ile Gln Pro Ser Lys Leu Tyr Pro Lys Tyr  
 530 535 540  
 Leu Leu Ala Lys Leu Tyr Glu Ala Ala Gly Asp Tyr Gly Ser Ala Gly  
 545 550 555 560  
 Glu Trp Ala Ser Lys Ile Leu Ala Thr Asp Glu Lys Val Pro Thr Thr  
 565 570 575  
 Ala Ala Lys Glu Ile Lys Glu Glu Met Arg Leu Leu Leu Lys Gln Val  
 580 585 590  
 Val Ile Lys Thr Lys Lys Asp Asp Tyr Lys  
 595 600

&lt;210&gt; 8405

&lt;211&gt; 236

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8405

Ser Met Glu Ala Lys Val Lys Ile Leu Phe Ile Asp Asp Asp Ile Thr  
 1 5 10 15  
 Phe Gly Arg Ile Cys Thr Ile Ile Leu Gln Glu Lys Gly Tyr Glu Val  
 20 25 30

Phe Tyr Gln Thr Thr Leu Asn Gly Ala Lys Ala Cys Ile Ala Glu Ala  
 35 40 45  
 His Pro Asp Ile Ile Val Leu Asp Val Glu Ile Gly Asn Gln Asn Gly  
 50 55 60  
 Ile Glu Val Ala Pro Glu Ile Thr Val Ile Ala Pro Asn Val Pro Val  
 65 70 75 80  
 Leu Phe Ile Ser Ser His Thr Glu Ser His Trp Val Val Gln Ala Leu  
 85 90 95  
 Glu Ala Gly Ala Val Ala Tyr Leu Lys Lys Pro Phe His Ala Glu Glu  
 100 105 110  
 Leu Ile Ala Tyr Val Glu Arg Phe Ala Val Gln Arg Pro Ser Gln Leu  
 115 120 125  
 Arg Ile Gly Ser Leu Ser Leu Asp Thr Glu Thr Arg Ile Leu Phe Ala  
 130 135 140  
 Asp Asp Ser Thr Val Ile Lys His Leu Ser Glu Ser Glu Tyr Lys Leu  
 145 150 155 160  
 Val Arg Leu Leu Leu Ile His Lys Asn His Ile Val Gly Arg Gly Gln  
 165 170 175  
 Ile Glu Met Glu Leu Trp Gly Asn Thr Glu Gly Asn Glu Gln Ser Thr  
 180 185 190  
 Asn Asn Leu Ile Phe Lys Ile Arg Lys Tyr Leu Val Ala Asp Pro Asp  
 195 200 205  
 Ile Ala Leu Glu Thr Ile Pro Arg Ser Gly Tyr Arg Leu Ser Val Lys  
 210 215 220  
 Leu Glu Lys Gln Lys Arg Arg Val Ser Asp Cys Phe  
 225 230 235

&lt;210&gt; 8406

&lt;211&gt; 251

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8406

Asn Trp Val Tyr Leu Gln Thr Lys Leu Lys Lys Tyr Met Lys Lys Ile  
 1 5 10 15  
 Tyr Leu Phe Leu Ser Phe Leu Ile Val Ile Leu Ala Tyr Pro Leu Ile  
 20 25 30  
 Ser Leu Leu Thr Val Leu Ile Ile Gly Asn Leu Val Gln Asn Thr Thr  
 35 40 45  
 Pro Trp Ile Arg Pro Met Thr Leu Phe Ser Leu Ala Thr Phe Ile Leu  
 50 55 60  
 Ile Phe Arg Lys Asn Ile Arg Cys His Ser Ser Phe Asn Arg Ser Leu  
 65 70 75 80  
 Ser Leu Lys Thr Ile Leu Ser Val Cys Ile Leu Thr Ile Ser Met Cys  
 85 90 95  
 Ile Ala Ile Gly Met Ile Thr Pro Ile Pro Gln Asn Ile Ser Leu Ala  
 100 105 110  
 Lys Gln Glu Leu Leu Asn Phe Pro Arg Phe Ile Tyr Ser Leu Phe Leu  
 115 120 125  
 Ile Pro Ile Leu Glu Glu Leu Cys Phe Arg Ile Ile Ile Asn Lys  
 130 135 140  
 Phe Lys Gly Lys Met Asn Gln Trp Ile Ile Ile Thr Gly Thr Ala Leu  
 145 150 155 160  
 Leu Phe Gly Ile Ile His Thr Ser Ser Ile Tyr Thr Met Ile Ser Met  
 165 170 175  
 Ala Cys Phe Gly Phe Ile Leu Ala Tyr Leu Tyr Val Lys Ser Glu Asn  
 180 185 190  
 Gly Phe Leu Leu Ile Leu Val His Ser Leu Tyr Ser Ile Ser Val Tyr  
 195 200 205

Cys Ser Tyr Ser Val Phe Trp Ser Ile Thr Ser Arg Val Leu Asn Tyr  
 210 215 220  
 Val Tyr Ser Pro Ile Tyr Tyr Ile Ile Val Ala Ile Ser Ile Met Tyr  
 225 230 235 240  
 Ile Ile Tyr Phe Phe Leu Lys Lys Lys Tyr Val  
 245 250

<210> 8407

<211> 365

<212> PRT

<213> B.fragilis

<400> 8407

Lys Arg Lys Tyr Arg Ile Met Lys Thr Phe Lys Ile Ile Leu Ile Cys  
 1 5 10 15  
 Ile Phe Ser Ala Thr Leu Ala Phe Val Ala Phe Arg Ser Ser Leu Arg  
 20 25 30  
 Gly Thr Lys Ala Ile Tyr Glu Thr Thr Gln Pro Gln Tyr Arg Glu Ile  
 35 40 45  
 Lys Glu Glu Ile Asn Ile Ser Gly Asn Val Phe Pro Met Lys Glu Ile  
 50 55 60  
 Glu Ile Lys Ser Gln Ile Ser Gly Val Leu Asp Lys Ile Asn Val Ser  
 65 70 75 80  
 Ile Gly Asp Lys Val Arg Ile Gly Asp Pro Val Ala Ser Ile Met Leu  
 85 90 95  
 Val Pro Asn Ala Ser Asp Met Glu Arg Leu Glu Tyr Asn Leu Asn Thr  
 100 105 110  
 Ala Gln Ile Glu Tyr Lys Ala Arg Leu Glu Asp Tyr Lys Arg Glu His  
 115 120 125  
 Lys Leu Tyr Ser Lys Asn Leu Val Ala Gln Ala Glu Met Asp Ser Tyr  
 130 135 140  
 Thr Gln Ala Tyr Glu Leu Ser Lys Glu Lys Leu Ala Ser Ala Gln Asn  
 145 150 155 160  
 Gln Leu Asn Ile Leu Lys Glu Gly Arg Ile Ser Pro Glu Thr Ala Ser  
 165 170 175  
 Asn Ile Val Arg Ser Ser Ile Ser Gly Val Ile Ile Asp Thr Pro Leu  
 180 185 190  
 Glu Thr Gly Ala Ser Val Ile Glu Arg Asn Asn Phe Asn Pro Gly Thr  
 195 200 205  
 Thr Ile Ala Val Val Ala Glu Met Ser Arg Phe Arg Phe Lys Ala Leu  
 210 215 220  
 Val Pro Glu Lys Tyr Leu Lys Asp Ile Ala Leu Gln Asp Thr Ile Ser  
 225 230 235 240  
 Leu Leu Phe Asn Ala Tyr Asp Asn Leu Arg Thr Arg Ala Val Val Thr  
 245 250 255  
 Lys Ile Ser Ser Lys Gly Asn Ala Glu Asn Gly Ile Met Lys Tyr Met  
 260 265 270  
 Leu Glu Ala Glu Phe Pro Val Ser Glu Asn Met Pro Val Ile Arg Ser  
 275 280 285  
 Gly Tyr Ser Ala Thr Ala Asn Met Val Ile Lys Gln Lys Lys His Thr  
 290 295 300  
 Leu Ser Ile Asp Glu Lys Tyr Val Leu Tyr Glu Asn Asp Ser Thr Tyr  
 305 310 315 320  
 Leu Tyr Leu Leu Asp Thr Val Thr Gln Gln Lys Thr Lys Gln Ile Ile  
 325 330 335  
 Asn Ile Gly Ile Ser Asp Gly Asn Tyr Val Glu Val Ile Lys Gly Ile  
 340 345 350  
 Ser Leu Lys Asp Lys Ile Val Thr Asn Ser Thr Asp Lys  
 355 360 365

<210> 8408  
 <211> 353  
 <212> PRT  
 <213> B.fragilis

<400> 8408

Trp Pro Asp Leu Ser Lys Val Leu Ser Arg Val Ile Pro Asn Tyr Pro  
 1 5 10 15  
 Met Phe Cys Gly Trp Ala Ser Phe Tyr Cys His Cys His Leu Leu Ser  
 20 25 30  
 Ile Thr Ile Phe Ile Tyr Gln Thr Glu Lys Leu Met Glu Ser Gln Lys  
 35 40 45  
 Pro Lys Ile Ala Leu Tyr Val Lys Arg Pro Phe Gly Asp Lys Leu Asn  
 50 55 60  
 Ala Thr Met Asp Phe Ile Lys Glu Asn Trp Lys Pro Met Leu Lys Phe  
 65 70 75 80  
 Cys Thr Tyr Leu Ile Leu Pro Leu Cys Leu Ile Gln Ala Ile Ser Met  
 85 90 95  
 Asn Gly Ile Met Gly Gly Ala Met Gly Ile Ala Ala Ala Lys Glu Ala  
 100 105 110  
 Gly Thr Asn Ser Leu Ala Ala Ile Gly Met Gln Phe Trp Val Asn Tyr  
 115 120 125  
 Gly Leu Met Phe Leu Cys Tyr Leu Val Gly Ser Ile Leu Leu Thr Ser  
 130 135 140  
 Ile Ile Tyr Gly Leu Met Gln Val Tyr Asn Gln Arg Glu Glu Arg Leu  
 145 150 155 160  
 Ala Gly Val Thr Phe Ala Asp Leu Lys Pro Phe Leu Phe Lys Asn Ile  
 165 170 175  
 Arg Arg Leu Leu Val Met Val Leu Phe Cys Ile Gly Leu Thr Ile Val  
 180 185 190  
 Val Gly Ile Val Met Gly Ile Leu Val Val Ala Ser Pro Phe Thr Leu  
 195 200 205  
 Leu Leu Thr Ile Pro Leu Leu Ile Ala Cys Ala Val Pro Leu Ala Leu  
 210 215 220  
 Phe Thr Pro Ile Tyr Leu Phe Glu Glu Ile Gly Ile Leu Ala Ala Phe  
 225 230 235 240  
 Trp Lys Thr Phe Arg Leu Gly Phe Ala Thr Trp Gly Gly Val Phe Leu  
 245 250 255  
 Val Ser Leu Val Met Gly Leu Ile Ser Ser Val Leu Gln Gly Val Thr  
 260 265 270  
 Thr Thr Pro Trp Tyr Ile Ala Thr Ile Val Lys Tyr Phe Phe Met Leu  
 275 280 285  
 Ser Asp Thr Gln Asn Glu Leu Thr Ile Ser Ala Gly Tyr Ser Phe Met  
 290 295 300  
 Val Tyr Leu Leu Ala Ile Val Gln Thr Phe Gly Ala Tyr Leu Ser Met  
 305 310 315 320  
 Ile Phe Ser Leu Ile Gly Met Val Tyr Gln Tyr Gly His Ala Ser Glu  
 325 330 335  
 Val Val Asp Ser Ile Ser Val Glu Ser Glu Ile Asp Lys Phe Glu Gln  
 340 345 350  
 Leu

<210> 8409  
 <211> 96  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8409

Pro Met Phe His Ile Leu Gly Phe Leu Phe Ile Ile Val Ile Ala Val  
 1 5 10 15  
 Ile Ile Ile Gly Leu Ala Leu Val Gly Ser Val Leu Arg Ala Val Phe  
 20 25 30  
 Gly Leu Gly Lys Arg Ser Pro Ser Ser Gly Ser Asp Arg Asn Gly Pro  
 35 40 45  
 Asn Asn Asn Ser Gly Ser Arg Arg Tyr Tyr His Gln Thr Gln Ala Asn  
 50 55 60  
 Asp Lys Glu Glu Ile Ile Thr Gly Thr Gly Ala Lys His Lys Lys Leu  
 65 70 75 80  
 Phe Asp Asp Asn Glu Gly Glu Tyr Val Asp Tyr Glu Glu Ile Lys Glu  
 85 90 95

&lt;210&gt; 8410

&lt;211&gt; 242

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8410

Thr Asn Asn Gln Asn Arg Met Ala Lys Tyr Lys Arg Val Leu Leu Lys  
 1 5 10 15  
 Leu Ser Gly Glu Ser Leu Met Gly Glu Lys Gln Tyr Gly Ile Asp Glu  
 20 25 30  
 Lys Arg Leu Ala Glu Tyr Ala Ala Gln Ile Lys Glu Ile His Glu Gln  
 35 40 45  
 Gly Val Gln Ile Gly Ile Val Ile Gly Gly Gly Asn Ile Phe Arg Gly  
 50 55 60  
 Leu Ser Gly Ala Asn Lys Gly Phe Asp Arg Val Lys Gly Asp Gln Met  
 65 70 75 80  
 Gly Met Leu Ala Thr Val Ile Asn Ser Leu Ala Leu Ser Ser Ala Leu  
 85 90 95  
 Val Ala Ala Gly Val Lys Ala Arg Val Leu Thr Ala Val Arg Met Glu  
 100 105 110  
 Pro Ile Gly Glu Phe Tyr Ser Lys Trp Lys Ala Ile Glu Cys Met Glu  
 115 120 125  
 Asn Gly Glu Ile Val Ile Met Ser Ala Gly Thr Gly Asn Pro Phe Phe  
 130 135 140  
 Thr Thr Asp Thr Gly Ser Ser Leu Arg Gly Ile Glu Ile Glu Ala Asp  
 145 150 155 160  
 Val Met Leu Lys Gly Thr Arg Val Asp Gly Ile Tyr Thr Ala Asp Pro  
 165 170 175  
 Glu Lys Asp Pro Thr Ala Thr Lys Phe His Asp Ile Thr Tyr Asp Glu  
 180 185 190  
 Val Leu Lys Arg Gly Leu Lys Val Met Asp Leu Thr Ala Thr Cys Met  
 195 200 205  
 Cys Lys Glu Asn Asn Leu Pro Ile Val Val Phe Asp Met Asp Thr Val  
 210 215 220  
 Gly Asn Leu Lys Lys Val Ile Thr Gly Glu Glu Ile Gly Thr Leu Val  
 225 230 235 240  
 His Asn

&lt;210&gt; 8411

&lt;211&gt; 469

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8411

Thr Ala Gly Gln Pro Lys Val Val Leu Leu Ile Leu Ala Leu Ala Gly  
 1 5 10 15  
 Asn Gly Leu Gly Ser His His Ile Arg Pro Thr Ala Leu Thr Gly Lys  
 20 25 30  
 Val Ser Val Arg Met Ile Tyr Arg His His Arg Ala Lys Val Gly Thr  
 35 40 45  
 Val Glu Cys Thr Val Asp Leu Cys Cys Leu Val Thr Val Val Thr Ser  
 50 55 60  
 Val Arg Ser Ile Pro Val Ser Val Val Val Asp Gly Leu Gln Pro His  
 65 70 75 80  
 Leu Gln Pro Ile Gly Asp Val Arg Ser Gln Val Gln Val Asp Ile Glu  
 85 90 95  
 Thr Ala Val Leu Ile Val Val Met Phe Gln Cys Ser Pro Leu Val Glu  
 100 105 110  
 Glu Thr Tyr Arg Thr Val Ile Gly Gly Leu Ala Arg Thr Ser Val Glu  
 115 120 125  
 Arg Gln Gly Val Leu Leu His Gln Gly Val Val Phe Asp Gly Phe Ile  
 130 135 140  
 Tyr Pro Val Gly Val Ala Ala Ile Gln Ile Leu Val Gly Ile Gly Arg  
 145 150 155 160  
 Ile Asp Glu Tyr Arg Gln Ile Val Phe Arg Val Gly Ile Ile Gly Ile  
 165 170 175  
 Asp Met Ile His Ile Val Leu Ile Val Val Ile Ala Ser Thr Arg Val  
 180 185 190  
 Ala Val Gly Gln Ile Met Glu Ile Gly Lys Cys Pro Arg Ile His Ile  
 195 200 205  
 Leu Arg Phe Ala Cys Arg Arg Ile Asp Arg Pro Val Gly Arg Glu Arg  
 210 215 220  
 Asp Leu Gly Phe Leu Val Phe Thr Phe Leu Gly Gly Asn Gln His Asp  
 225 230 235 240  
 Thr Ile Gly Cys Leu Cys Ser Val Asn Arg Ser Arg Ser Arg Ile Leu  
 245 250 255  
 Gln Tyr Arg Tyr Ala Phe His Ile Gly Arg Ile Asp His Val Gly Ile  
 260 265 270  
 His Leu His Thr Ile Asp Gln Tyr Gln Arg Ser Gly Arg Val Tyr Arg  
 275 280 285  
 Cys Ser Thr Thr Asn Val Glu Pro Val Ser Phe Ala Arg Arg Thr Val  
 290 295 300  
 Val Gly Gly Asn Val Gln Val Thr Asp Arg Arg Leu Gln Ser Leu Ala  
 305 310 315 320  
 Lys Ile Gly Asp Arg Ala Thr Leu Gln Cys Leu Cys Arg Asn Thr Gly  
 325 330 335  
 Tyr Gly Ser Gly Glu Val Gly Phe Leu Leu Cys Thr Ile Thr His His  
 340 345 350  
 His Asp Phe Val Gln Gly Phe Ala Val Leu Phe Gln Gly Asp Leu Gln  
 355 360 365  
 Thr Gly Leu Cys Gly Asn Gly His Asp Leu Cys Phe His Ser Asn Lys  
 370 375 380  
 Gly Asp Leu Lys Leu Leu Ser Leu Phe Arg Phe Asn Arg Glu Val Thr  
 385 390 395 400  
 Ile His Ile Gly Asp Cys Ser Thr Ser Gly Ser Thr Leu Tyr Gln Tyr  
 405 410 415  
 Arg Ser Pro Gly Lys Arg Arg Thr Arg Asn Val Lys Asn Thr Thr Gly  
 420 425 430  
 Tyr Phe Leu Phe Leu Leu Phe Tyr Leu His His Ser Gly Arg Cys Cys  
 435 440 445  
 Ile Val Ala Val Arg Ser Lys Ala Arg Leu Lys Ser His Thr Arg Lys  
 450 455 460  
 Lys Asp Lys His Pro

465

<210> 8412  
 <211> 207  
 <212> PRT  
 <213> B.fragilis

<400> 8412

Met	Thr	Leu	Gln	Ala	Asp	Thr	Leu	Val	Cys	Asp	Thr	Ala	Arg	Val	Ala
1				5					10					15	
Phe	Trp	Gln	Ser	Asn	Pro	Asp	Tyr	Asp	Tyr	Asn	Arg	Glu	Leu	Met	Thr
			20					25					30		
Pro	Glu	Ile	Asp	Ile	Tyr	Gly	Trp	Leu	Ser	Met	Gln	Leu	Ser	Lys	Leu
		35					40					45			
Leu	Arg	Ala	Ile	Phe	Gly	Ser	Arg	Phe	Ala	Glu	Glu	Tyr	Ser	Gly	Ile
	50					55					60				
Ile	Leu	Ile	Ile	Ile	Ala	Ile	Leu	Ile	Leu	Leu	Leu	Ile	Leu	Trp	Phe
65					70					75				80	
Leu	Tyr	Lys	Lys	Arg	Pro	Glu	Leu	Phe	Met	Arg	Ser	Arg	Arg	Gly	Pro
				85					90					95	
Val	Asn	Tyr	Ser	Val	His	Glu	Asp	Thr	Ile	Tyr	Gly	Val	Asp	Phe	Asp
			100					105					110		
Ala	Glu	Ile	Arg	Arg	Ala	Ile	Asp	Arg	Lys	Asp	Tyr	Arg	Glu	Ala	Ile
		115					120					125			
Arg	Leu	Leu	Tyr	Leu	Gln	Thr	Leu	Lys	Leu	Leu	Ser	Asp	Asp	Gly	Arg
	130					135						140			
Ile	Asp	Trp	Gln	Leu	Tyr	Lys	Thr	Pro	Thr	Glu	Tyr	Ile	Tyr	Glu	Val
145					150					155				160	
Lys	Gln	Glu	Ile	Leu	Arg	Thr	Pro	Phe	Arg	Asn	Leu	Thr	His	Gly	Phe
				165					170					175	
Leu	Arg	Val	Arg	Tyr	Gly	Asn	Phe	Pro	Ala	Ser	Glu	Ser	Leu	Phe	Glu
			180					185					190		
Glu	Leu	Ala	Ala	Leu	Gln	Thr	Gln	Ile	Arg	Lys	Gly	Gly	Asp	Val	
		195					200					205			

<210> 8413  
 <211> 85  
 <212> PRT  
 <213> B.fragilis

<400> 8413

Leu	Leu	Phe	Leu	Lys	Glu	Val	Asn	Val	Leu	Met	Ile	Lys	Pro	Glu	Tyr
1				5					10					15	
Leu	Ser	Glu	Lys	Ile	Arg	Lys	Phe	Ala	Tyr	Lys	Tyr	Pro	Ile	Tyr	Val
			20					25					30		
Phe	His	Ser	Ser	Ile	Arg	Thr	Ile	Ser	Lys	Lys	Asp	Arg	Val	Ile	Lys
		35					40					45			
Arg	Glu	Ile	Lys	Ile	Ser	Phe	Ser	Cys	Lys	Asn	Ala	Asn	Lys	Gln	Ile
	50					55					60				
Tyr	Leu	His	Asn	Tyr	Phe	Ser	Leu	Arg	Thr	Arg	Asp	Lys	Ile	Tyr	Pro
65					70					75				80	
Tyr	Asn	Gln	Lys	Thr											
				85											

<210> 8414  
 <211> 165  
 <212> PRT  
 <213> B.fragilis



&lt;400&gt; 8414

Leu Tyr Thr Lys His Asn Thr Met Lys Lys Lys Ile Ile Arg Tyr Leu  
 1 5 10 15  
 Ile Val Ser His Leu Thr Phe Ile Leu Ser Ile Gly Gly Met Ala Val  
 20 25 30  
 Ala Phe Tyr Tyr Tyr His Thr Ala Gln Met Ala Gln Ile Lys Asn Ala  
 35 40 45  
 Asn Ile Leu Leu Ile Ser Lys Asp Glu Met Lys Leu Arg Leu Ile Asp  
 50 55 60  
 Tyr Lys Gly Gln Glu Leu Phe Thr Ala Asp Ile Ala Cys Gly Lys Asn  
 65 70 75 80  
 Tyr Gly Asn Lys Glu Lys Gln Gly Asp Leu Lys Thr Pro Glu Gly Thr  
 85 90 95  
 Phe Lys Ile Ile Asp Ile Gln Asp Ala Ser Lys Trp Lys His Asp Phe  
 100 105 110  
 Gly Asp Gly Lys Gly Glu Ile Glu Gly Ala Tyr Gly Asn His Phe Ile  
 115 120 125  
 Arg Leu Glu Thr Pro Gly His Lys Gly Asn Trp Asp Ser Trp His Pro  
 130 135 140  
 Arg Pro Ile Ile Tyr Trp Asp Pro Glu Arg Pro Glu Asp Ala Phe Glu  
 145 150 155 160  
 Ser Lys Ile Gln Asn  
 165

&lt;210&gt; 8415

&lt;211&gt; 190

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8415

Ile Leu Asn Lys Met Val Asp Val Lys Thr Ile Ile Glu Glu Ser Gln  
 1 5 10 15  
 Glu Lys Met Asp Met Ala Val Met Tyr Leu Glu Glu Ala Leu Ala His  
 20 25 30  
 Ile Arg Ala Gly Lys Ala Ser Thr Arg Leu Leu Asp Gly Ile Arg Val  
 35 40 45  
 Asp Ser Tyr Gly Ser Met Val Pro Ile Ser Asn Val Ala Ala Val Thr  
 50 55 60  
 Thr Pro Asp Ala Arg Ser Ile Thr Ile Lys Pro Trp Asp Lys Ser Met  
 65 70 75 80  
 Phe Arg Val Ile Glu Lys Ala Ile Ile Asp Ser Asp Leu Gly Ile Met  
 85 90 95  
 Pro Glu Asn Asn Gly Glu Ile Ile Arg Ile Gly Ile Pro Pro Leu Thr  
 100 105 110  
 Glu Glu Arg Arg Lys Gln Leu Ala Lys Gln Cys Lys Ala Glu Gly Glu  
 115 120 125  
 Thr Ala Lys Val Ser Ile Arg Asn Ala Arg Arg Asp Gly Ile Asp Ala  
 130 135 140  
 Leu Lys Lys Ala Val Lys Asp Gly Leu Ala Glu Asp Glu Gln Lys Asn  
 145 150 155 160  
 Ala Glu Ala Lys Leu Gln Lys Val His Asp Lys Tyr Ile Ala Lys Ile  
 165 170 175  
 Glu Glu Met Leu Ala Glu Lys Asp Lys Glu Ile Met Thr Val  
 180 185 190

&lt;210&gt; 8416

&lt;211&gt; 433

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8416

Gln Asn Asn Asn Phe Ile Ile Thr Glu Asn Gln Glu Thr Leu Leu Ile  
 1 5 10 15  
 Met Lys Ile Leu Phe Ser Leu Asp Val Ser Asn Gln Arg Gln Val Asp  
 20 25 30  
 Phe Cys Asn Arg Ile Leu Lys Ile Leu Asp Asn Lys Asp Asp Ser Asn  
 35 40 45  
 Asp Ile Thr Leu Ile Cys Lys Ser Gln Asn His Leu Ser Asp Tyr Leu  
 50 55 60  
 Tyr Ile Pro Pro Ser Ser His Ile Lys Thr Glu Glu Ala Glu Ile Ile  
 65 70 75 80  
 Leu Thr Tyr Gly Lys Thr Gly Leu Ser His Ile Ser Gln Phe Ala Arg  
 85 90 95  
 Lys Ser Asn Ile Pro Ile Ile His Phe Ile Asn Thr Glu Tyr Leu Lys  
 100 105 110  
 Asp Glu Tyr Leu Ser Glu Asp Gln Gln Val Glu Lys Ile Ile Leu Cys  
 115 120 125  
 Asp Cys Phe Asn Gln Leu Leu Glu Ser Phe Phe Gln Lys Asp Lys Met  
 130 135 140  
 Phe Val Leu Pro Tyr Phe Ser Ile Pro Val Val Thr Lys Asn Val Glu  
 145 150 155 160  
 Ile Arg Asn Lys Asn Ser Pro Lys Leu Leu Ile Ala Ile Ala His Pro  
 165 170 175  
 Asn Leu Lys Asn Ser Pro Val Tyr Tyr Ile Ser Asn Leu Leu Asn Ile  
 180 185 190  
 Leu Ser Asp Tyr Arg Ile Thr Ile Leu Tyr Asn Gly Asp Pro Leu Ile  
 195 200 205  
 Pro Ile Phe Asn Ser Asn Ile Thr Leu Ile Asn Val Lys Glu Ser Asn  
 210 215 220  
 Ile Glu Lys Val Ile Leu Ser Asn Asp Ile Ile Ile Gly Asp Gly Ile  
 225 230 235 240  
 Ser Ile Tyr Thr Gly Ile Met Leu Gly Lys Pro Cys Ile Val Ile Gly  
 245 250 255  
 Glu Gln Gly Tyr Gly Gly Leu Ile Thr Pro Gln Asn Leu Ser Gln Gln  
 260 265 270  
 Phe Ala Asn Lys Phe Gln Gly Arg Ile Gly Gly Ser Leu Asn Glu Tyr  
 275 280 285  
 Ile Pro Leu Asn Leu Ile Met Asn Asp Ile Gln Tyr Val Gln Asn Thr  
 290 295 300  
 Glu Lys Ser Lys Asn Ile Asp Cys Ile Ile Ile Lys Asn Lys Lys Leu  
 305 310 315 320  
 Leu Asp Asn Glu Tyr Arg Gln Thr Gln Gln Ser Leu Asn Asp Leu Ile  
 325 330 335  
 Leu Glu Val Ala Ala Asn His Lys Gln Leu Tyr Thr Phe Pro Met Glu  
 340 345 350  
 Ile His Leu Arg Leu Ser Asp Ala Phe His Leu Ile Lys Phe Ser Asp  
 355 360 365  
 Thr Lys Phe Val Leu Ala Tyr Thr Ala Asn Asn Lys Val His Ser Ser  
 370 375 380  
 Phe Gly Lys Glu Glu Ala Glu Ile Ile Ala Leu Phe Lys Arg Ser Cys  
 385 390 395 400  
 Leu Ile Lys Asp Ala Ile Asn Met Ser Pro Tyr Lys Lys Glu Pro Lys  
 405 410 415  
 Ile Phe Val Glu Phe Ile Gln Met Leu Phe Asn Glu Lys Ile Leu Ile  
 420 425 430  
 Ala

<210> 8417  
 <211> 361  
 <212> PRT  
 <213> B.fragilis

<400> 8417

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Asp Met Asp Lys Lys Val Lys Trp Gly Ile Val Ile Leu Val Gly Ala
1      5      10      15
Gly Leu Ile Gly Trp Gly Ile Tyr Ser Arg Leu Pro Lys Ala Asn Glu
20     25     30
Glu Leu Ala Ala Asp Lys Val Met Thr Gly Lys Gln Ile Asn Lys
35     40     45
Arg Val Leu Asn Val Asn Ala Lys Ile Ile Lys Pro Gln Leu Leu Thr
50     55     60
Asp Gln Ile Gln Ile Ser Gly Ser Leu Met Pro Asp Glu Glu Val Asp
65     70     75     80
Leu Ser Phe Glu Thr Ser Gly Lys Ile Val Glu Ile Asn Phe Asp Glu
85     90     95
Gly Thr Thr Val Lys Lys Gly Gln Leu Leu Ala Lys Val Asn Asp Arg
100    105    110
Gln Leu Gln Ala Gln Leu Gln Arg Leu Val Ala Gln Leu Lys Leu Ala
115    120    125
Glu Asp Arg Val Phe Arg Gln Asn Ala Leu Leu Glu Arg Asp Ala Val
130    135    140
Ser Lys Glu Ala Tyr Glu Gln Val Lys Thr Glu Leu Ala Thr Leu Asn
145    150    155    160
Ala Asp Ile Asp Leu Val Lys Ala Asn Ile Ala Met Thr Glu Leu Arg
165    170    175
Ala Pro Phe Asp Gly Val Ile Gly Leu Arg Gln Val Ser Val Gly Ser
180    185    190
Tyr Ala Ser Pro Thr Thr Ile Val Ala Lys Leu Thr Lys Ile Ile Pro
195    200    205
Leu Lys Ile Glu Phe Ser Val Pro Glu Arg Tyr Ala Ser Gln Val Lys
210    215    220
Lys Gly Thr Asn Leu Asn Phe Glu Leu Glu Gly Lys Leu Ser Ser Phe
225    230    235    240
Pro Ala Lys Val Tyr Ala Thr Glu Ser Arg Ile Asp Gln Ser Thr Arg
245    250    255
Thr Leu Thr Val Arg Ala Leu Tyr Ala Asn Ser Asn Gly Ala Ile Leu
260    265    270
Pro Gly Arg Tyr Ala Ser Ile Gln Leu Lys Lys Glu Glu Ile Pro Asn
275    280    285
Ala Ile Ala Ile Pro Ser Glu Ser Ile Val Pro Glu Met Gly Lys Asp
290    295    300
Lys Val Phe Leu Tyr Lys Ser Gly Lys Ala Glu Pro Val Glu Ile Thr
305    310    315    320
Ala Gly Ile Arg Thr Glu Ala Glu Val Gln Val Ile Lys Gly Leu Gln
325    330    335
Met Gly Asp Thr Ile Ile Thr Ser Gly Thr Leu Gln Leu Arg Thr Gly
340    345    350
Leu Pro Val Thr Leu Asp Asn Ile Asn
355    360

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<210> 8418  
 <211> 67  
 <212> PRT  
 <213> B.fragilis

<400> 8418

Phe Ile Thr Lys Ile Phe Cys Ile Lys Ile Glu Ala Ile Ile Asp Asn  
 1 5 10 15  
 Asn Ile Arg Met Ala Asp Asn Gly Lys Tyr Cys Ile Gly Ile Thr Tyr  
 20 25 30  
 Ile Asp Arg Met Ile Glu Ile Gly Leu Ser Ile Phe Asn Ser Ile Leu  
 35 40 45  
 Phe Leu Leu Val Val Lys Leu Ile Ile Asp Pro Asp Lys Leu Phe Phe  
 50 55 60  
 Cys Lys Ile  
 65

<210> 8419  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

<400> 8419  
 Cys Ser Cys Leu Pro Ser Phe His Ile Leu Trp Met Asp Leu Pro Met  
 1 5 10 15  
 Gln Ala Arg His Leu Pro Val Val Ile Ser Ala Pro Val Ile Val Trp  
 20 25 30  
 Ser Phe Thr Val Pro Ser Asp Ser Tyr Ser Asp Gly Val Ser Asp Tyr  
 35 40 45  
 Gln Pro Gly Ser Pro Phe Phe Thr Val Leu Val Asp Asn His Phe Trp  
 50 55 60  
 Asp Tyr  
 65

<210> 8420  
 <211> 116  
 <212> PRT  
 <213> B.fragilis

<400> 8420  
 Tyr Phe Asn Asn Met Lys Lys Leu Asn Ile Asn Lys Leu Ser Glu Tyr  
 1 5 10 15  
 Pro Val Val Asn Ile Glu Glu Gln Thr Ser Leu Lys Gly Gly Val Ser  
 20 25 30  
 Gln Asp Glu Phe Phe Arg Met Leu Glu Asn Asn Thr Trp Gln Gly Gly  
 35 40 45  
 Tyr Val Asp Gly Tyr Gly Tyr Ala Ala Pro Ala Val Thr Ile Tyr Gly  
 50 55 60  
 Thr Ser Trp Asn Glu Thr Gly Arg Trp Asp Ile Asp Gly Cys Pro Ala  
 65 70 75 80  
 Cys Gly Asn Gly Leu Gly Tyr Asp Gln Thr Lys Pro Lys Pro Glu His  
 85 90 95  
 Asp Ile Val Thr Ile Trp Thr His Phe Phe Cys His Lys His Ile Tyr  
 100 105 110  
 Tyr Gly Ser Lys  
 115

<210> 8421  
 <211> 186  
 <212> PRT  
 <213> B.fragilis

<400> 8421  
 Met Val Asn Lys Tyr Phe Phe Ile Ala Ala Phe Leu Phe Trp Leu Leu  
 1 5 10 15

Pro Ala Ile Val Arg Leu Cys Val Ile Asp Ile Ser Glu Ile Ala Ile  
                   20                  25                  30  
 Ser His Thr Thr Thr Phe Glu Ile Asn Ser Pro Ala Asn Lys Thr Leu  
                   35                  40                  45  
 Tyr Phe Leu Tyr Asn Lys Asp Lys His Ser Ala Phe Ile Thr Ile Leu  
                   50                  55                  60  
 Lys Asn Asn Met Gln Gly Cys Ile Leu Asn Val Leu Gly Gly Gly Leu  
                   65                  70                  75                  80  
 Leu Gly Ile Gly Thr Leu Phe Asn Leu Leu Asn Gly Phe Cys Phe  
                   85                  90                  95  
 Ala Asp Val Cys Cys Arg Thr Tyr Lys Leu Gly Met Ser Ile Thr Asp  
                   100                  105                  110  
 Ile Phe Ala Leu Thr Leu Pro His Ser Phe Glu Leu Ile Gly Phe Trp  
                   115                  120                  125  
 Ile Ser Gly Gly Ile Gly Leu Tyr Ile Ala Trp Asn Ile Ile Leu Phe  
                   130                  135                  140  
 Met Tyr Thr Asp Lys Met Pro Thr Phe Lys Phe Tyr Lys Asn Ile Gly  
                   145                  150                  155                  160  
 Ile Asn Leu Leu Ile Ile Phe Ile Ile Ile Leu Ser Ala Ala Tyr Ile  
                   165                  170                  175  
 Glu Thr Tyr Val Ser Ile Asn Met Leu Thr  
                   180                  185

&lt;210&gt; 8422

&lt;211&gt; 270

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8422

Lys Ser Ser Lys His Leu Gln Val Glu Met Thr Tyr Val Asp Asn Phe  
 1                  5                  10                  15  
 Leu Lys Phe Ile Phe Val Ser Ser Cys Arg His Cys Asn Phe Met Ala  
                   20                  25                  30  
 Ser Asn Tyr Gln Pro Ile Thr Met Gln Asp Phe Val His Leu His Val  
                   35                  40                  45  
 His Thr Gln Tyr Ser Leu Leu Asp Gly Gln Ala Ser Val Ser Ala Leu  
                   50                  55                  60  
 Val Asp Lys Ala Met Lys Asp Gly Met Lys Gly Ile Ala Val Thr Asp  
                   65                  70                  75                  80  
 His Gly Asn Met Cys Ala Ile Lys Glu Phe Thr Asn Tyr Val Asn Lys  
                   85                  90                  95  
 Lys Asn Gly Gly Pro Lys Gly Glu Ile Lys Asp Leu Lys Lys Arg Ile  
                   100                  105                  110  
 Ala Ala Ile Glu Ala Gly Glu Val Glu Cys Ala Asp Lys Asp Ala Glu  
                   115                  120                  125  
 Ile Ala Asp Cys Lys Ala Lys Ile Ala Asp Ala Glu Gly Arg Leu Phe  
                   130                  135                  140  
 Lys Pro Ile Ile Gly Cys Glu Met Tyr Val Ala Arg Arg Thr Met Asp  
                   145                  150                  155                  160  
 Lys Lys Glu Gly Lys Pro Asp Gln Ser Gly Tyr His Leu Ile Val Leu  
                   165                  170                  175  
 Ala Lys Asn Glu Lys Gly Tyr His Asn Leu Ile Lys Leu Val Ser Arg  
                   180                  185                  190  
 Ala Trp Thr Lys Gly Tyr Tyr Met Arg Pro Arg Thr Asp Arg Asn Glu  
                   195                  200                  205  
 Leu Glu Lys Tyr His Glu Gly Leu Ile Ile Cys Ser Ala Cys Leu Gly  
                   210                  215                  220  
 Gly Glu Val Pro Lys Lys Ile Thr Gln Gly Leu Leu Ala Glu Ala Glu  
                   225                  230                  235                  240

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<210> 8423
<211> 418
<212> PRT
<213> B.fragilis
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Ile	Gly	Ile	Lys	Trp	Leu	Lys	Tyr	Leu	Arg	Pro	Leu	Ser	Leu	Thr	Ser
1				5					10					15	
Gly	Ile	Trp	Leu	Thr	Lys	Arg	Ile	Ile	Lys	Asn	Glu	Met	Lys	Thr	Lys
			20					25					30		
Leu	Thr	Asn	Cys	Val	Lys	Thr	Val	Leu	Leu	Ser	Phe	Met	Leu	Gly	Val
		35					40					45			
Leu	Phe	Ala	Cys	Cys	Gln	Gly	Ala	Ala	Ser	Ser	Gly	Asn	Ala	Gly	Lys
	50					55					60				
Asn	Ala	Ser	Arg	Val	Arg	Ile	Ala	Ser	Asn	Asp	Ser	Ala	Lys	Leu	Val
65					70					75					80
Pro	Asp	Lys	Ala	Leu	Asn	Asp	Ala	Ser	Cys	Val	Leu	Ala	Gly	Leu	Pro
				85					90					95	
Val	Asp	Lys	Ala	Ser	Gly	Lys	Leu	Tyr	Ala	Leu	Thr	Arg	Thr	Lys	Glu
			100					105					110		
Trp	Lys	Asn	His	Ala	Arg	Tyr	Met	Asp	Gln	Ile	Trp	Asn	Val	Phe	Arg
		115					120					125			
Gln	Thr	Ala	Pro	Arg	Leu	Val	Ala	Phe	Ser	Gln	Thr	Glu	Leu	Glu	Asp
						135					140				
Ile	Asn	Thr	Arg	Cys	His	Thr	Leu	Phe	Tyr	Pro	Phe	Gly	Gly	Pro	Asp
145					150					155					160
Phe	Leu	Phe	Ala	Asn	Ala	Phe	Phe	Pro	Glu	Met	Asp	Thr	Tyr	Val	Leu
				165					170					175	
Ile	Gly	Leu	Glu	Pro	Ala	Gly	Thr	Ala	Pro	Lys	Val	Lys	His	Pro	Ser
			180					185					190		
Ala	Glu	Thr	Tyr	Arg	Leu	Tyr	Gln	Asn	Ala	Val	Ser	Asn	Val	Leu	Asn
		195					200					205			
Leu	Ser	Phe	Phe	Asn	Asp	Met	Asp	Lys	Glu	Leu	Ala	Asn	Asp	Thr	Ile
	210					215					220				
Asp	Gly	Val	Val	Pro	Ile	Tyr	Ser	Leu	Leu	Met	Ala	Arg	Gly	Asn	Arg
225					230					235					240
Lys	Ile	Val	Ser	Ile	Gln	Glu	Val	Trp	Leu	Ser	Glu	Thr	Gly	Asp	Leu
				245					250					255	
Phe	Glu	Arg	Lys	Glu	Gly	Asp	Thr	Ile	Arg	Asn	Thr	Cys	Ser	Ala	Gly
			260					265					270		
Met	Glu	Val	Arg	Phe	Phe	Arg	Pro	Gly	Ala	Ser	Arg	Leu	Gln	Thr	Leu
		275					280					285			
Tyr	Tyr	Phe	Cys	Thr	Asp	Ile	Ser	Asn	Glu	Gly	Leu	Gln	Ala	Asn	Arg
	290					295					300				
Pro	Leu	Gln	Ala	Phe	Met	Asp	Arg	Phe	Asp	Ala	Glu	Thr	Thr	Ala	Thr
305					310					315					320
Phe	Val	Lys	Ser	Ala	Ser	Tyr	Leu	Met	His	Glu	Pro	Ala	Phe	Ser	Arg
				325					330					335	
Ile	Arg	Glu	Thr	Ile	Leu	Gln	Lys	Ser	Ser	Ala	Val	Val	Gln	Asp	Asp
			340					345					350		
Ser	Ser	Ile	Pro	Le											

Gln Pro Gln Leu Arg Asp Ala Tyr Gln Leu Gly Asp Pro Lys Pro Leu  
 385 390 395 400  
 Asn Phe Arg Ile Gly Tyr Ala Arg Gln Ser Asn Leu Gln Val Ala Arg  
 405 410 415  
 Arg Lys

<210> 8424  
 <211> 220  
 <212> PRT  
 <213> B.fragilis

<400> 8424  
 Ile Leu Gln Lys His Arg His Gln Phe Ile Asp His Phe His Asn Tyr  
 1 5 10 15  
 Ser Phe Ser Cys Leu His Arg Asn Leu Cys Ile Asn Lys Tyr Val Asn  
 20 25 30  
 Met Lys Arg Ile Ile Asn Thr Leu Glu Lys Met Pro Lys Trp Tyr Gly  
 35 40 45  
 Phe Leu Thr Ile Leu Leu Tyr Ser Leu Leu Leu Ala Glu Phe Leu Ile  
 50 55 60  
 Thr Thr Asn His Leu Val Asn Asn Asn Asn Leu Glu Thr Asp Arg Leu  
 65 70 75 80  
 Phe Val Ile Leu Ala Arg Met Ser Tyr Ile Ile Val Leu Ser Ala  
 85 90 95  
 Ile Val Ile Trp Leu Ile Ser Thr Phe Leu Phe His Leu Thr Ala Ile  
 100 105 110  
 Leu Phe Asn Gly Tyr Ala Pro Phe Lys His Leu Leu Tyr Ile Ser Ser  
 115 120 125  
 Tyr Phe Tyr Ile Ile Pro Ala Ile Ser Val Phe Ile Ser Ile Phe Leu  
 130 135 140  
 Leu Asn Gln Lys Thr Glu Tyr Ser Thr Ser Asn Ala Val Thr Thr Leu  
 145 150 155 160  
 Gln Asn Asn Tyr Ser Leu Gly Leu Pro Ile Met Leu Val Asn Tyr Ser  
 165 170 175  
 Phe Ile Pro Tyr Tyr Leu Leu Cys Met Ile Leu Ile His His Leu Tyr  
 180 185 190  
 Lys Val Arg Leu Arg Tyr Ala Ile Ala Ser Val Val Ile Pro Ile Leu  
 195 200 205  
 Ser Val Trp Ala Ile Thr Lys Leu Phe Thr Leu Leu  
 210 215 220

<210> 8425  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 8425  
 His Ser Lys Lys Leu Ile Leu Ala Asn Ser Ser Phe Lys Arg Ser Leu  
 1 5 10 15  
 Leu Phe Tyr Ile His Tyr Arg Ile Phe Thr Gln Phe Ile Tyr Ile Gln  
 20 25 30  
 Phe Phe His Ile Val Lys Ile Leu Val Arg Arg Trp Leu Phe Leu Asp  
 35 40 45  
 Phe Phe Val Lys Gln Tyr Phe Leu Leu Phe Asp Leu Leu Gly Gly Met  
 50 55 60  
 Val Cys Gln Gly Asn His Gly Arg Tyr Lys His Asn Phe Cys Leu Asn  
 65 70 75 80  
 Leu His Cys Asn Val Leu Phe Leu Leu Ala Val Phe Thr Cys Leu Val

85 90 95  
 Ile Leu Ile Leu Leu Phe Ile Ser Leu  
 100 105

<210> 8426  
 <211> 101  
 <212> PRT  
 <213> B.fragilis

<400> 8426  
 Ile Ser Lys Lys Val Lys Thr Asn Lys Lys Ala Ile Leu Gly Met Leu  
 1 5 10 15  
 Val Ala Ile Val Ile Ser Leu Gly Val Met Gly Gly Ile Asn Glu Asn  
 20 25 30  
 Lys Cys Asp Tyr Asn Leu Gln Glu Ala Thr Val Ala Met Thr Tyr Ala  
 35 40 45  
 Ala Gly Thr Gly Glu Tyr Gly Pro Glu Ala Ser Gly Lys Leu Ala Val  
 50 55 60  
 Gly Ala Leu Ala Met Gly Lys Val Thr Glu Thr Leu Gly Thr Cys Ala  
 65 70 75 80  
 Val Gly Leu Gly Trp Cys Pro Ala Gly Trp Ile Ala Gly Val Gly Ala  
 85 90 95  
 Ala Ala Ala Gly Leu  
 100

<210> 8427  
 <211> 740  
 <212> PRT  
 <213> B.fragilis

<400> 8427  
 Lys Arg Lys Asn His Leu Gln Ile Ser Lys Lys Lys Ile Gln Arg Thr  
 1 5 10 15  
 Thr Met Arg Ile Asn Phe Pro Ser Tyr Ile Gln His Asp Gln Met Asp  
 20 25 30  
 Cys Gly Pro Ala Cys Leu Lys Ile Ile Ala Gln Asn Tyr Gly Lys Arg  
 35 40 45  
 Phe Ser Leu Lys Tyr Leu Arg Asp Arg Cys Tyr Ala Thr Arg Glu Gly  
 50 55 60  
 Val Ser Leu Phe Asp Ile Gly Arg Ala Ala Glu Glu Ile Gly Phe Arg  
 65 70 75 80  
 Thr Leu Ala Ile Lys Val Thr Phe Glu Asp Leu Ile Glu Lys Met Pro  
 85 90 95  
 Leu Pro Leu Ile Val His Trp Lys Gln Ser His Phe Val Val Val His  
 100 105 110  
 Lys Ile Thr Asn Arg Lys Val Tyr Ile Ser Asp Pro Ala Gln Gly Leu  
 115 120 125  
 Thr His Tyr Asn His Lys Glu Phe Arg Glu Ala Trp Glu Met Cys Asn  
 130 135 140  
 Gly Leu Gly Thr Ile Met Ile Leu Glu Thr Thr Pro Glu Phe His Asn  
 145 150 155 160  
 Met Asn Glu Met Glu Thr Arg Ala Ser Phe Ser His Phe Met Lys Tyr  
 165 170 175  
 Leu Lys Pro His Arg Tyr Leu Gly Gln Val Ile Val Gly Met Val  
 180 185 190  
 Ala Gly Ile Leu Ile Gly Leu Leu Ser Pro Phe Ile Ser Gln Ser Ile  
 195 200 205  
 Val Asp Phe Gly Ile Gly Ser Gly Asn Ile Gln Phe Val Asn Thr Met  
 210 215 220



Leu Ile Ala Gly Met Ile Leu Ala Phe Ser Ser Met Ala Ser Asp Phe  
 225 230 235 240  
 Ile Gln Ser Arg Leu Met Leu Tyr Val Ser Glu Arg Ile Asn Met Gly  
 245 250 255  
 Met Val Ser Asp Phe Leu Arg Lys Thr Met Ser Leu Pro Ile Thr Phe  
 260 265 270  
 Phe Glu Arg Lys Met Val Ser Asp Leu Leu Thr Arg Ile Asp Asp His  
 275 280 285  
 Gly Arg Ile Gln Ser Phe Ile Met Ser Thr Phe Leu Gly Ile Phe Ile  
 290 295 300  
 Asn Ile Leu Leu Phe Val Ile Tyr Ser Leu Leu Met Leu Tyr Tyr Glu  
 305 310 315 320  
 Ser Asn Met Phe Leu Val Phe Met Ile Gly Asn Thr Val Tyr Thr Gly  
 325 330 335  
 Trp Ile Phe Leu Phe Leu Lys Gln Arg Lys Lys Leu Asp Asn Gln Leu  
 340 345 350  
 Phe Gly Cys Arg Ala Thr Asn Gln Asn Asp Leu Leu Glu Leu Leu Glu  
 355 360 365  
 Asn Val Asn Glu Ile Lys Ile Asn Asn Ile Ala Asn Lys Arg Arg Trp  
 370 375 380  
 Lys Trp Glu Leu Ser Arg Phe Lys Ile Tyr Gly Leu Arg Val Lys Asn  
 385 390 395 400  
 Met Asn Leu Asp Gln Ile Glu Ala Thr Gly Ala Ser Phe Ile Ile His  
 405 410 415  
 Leu Gln Gly Leu Phe Ile Thr Tyr Ile Ala Ala Leu Asn Val Ile Glu  
 420 425 430  
 Gly Thr Met Thr Leu Gly Met Met Met Ala Ala Gln Tyr Ile Leu Gly  
 435 440 445  
 Gln Leu Asn Ala Pro Ile Lys Ser Met Ile Gly Tyr Val His Ser Leu  
 450 455 460  
 Gln Phe Ala Arg Ile Ser Leu Lys Arg Val Asn Glu Val Ile Trp Glu  
 465 470 475 480  
 Glu Glu Pro Glu Ile Ser Glu Ser Lys Val Ser Ile Pro Ile Glu Lys  
 485 490 495  
 Gly Val Lys Val Lys Asp Leu Asp Phe Tyr Tyr Asn Pro Asn Leu Asn  
 500 505 510  
 Lys Val Leu Asp Asn Ile Asn Leu Glu Ile Pro Glu Gly Lys Ile Thr  
 515 520 525  
 Ala Ile Val Gly Glu Ser Gly Ser Gly Lys Thr Thr Leu Leu Lys Leu  
 530 535 540  
 Leu Leu Arg Phe Tyr Lys Pro Thr Asn Gly Glu Ile Glu Val Gly Gly  
 545 550 555 560  
 Val Pro Leu Asp Asn Ile Asp Leu Tyr Arg Trp Arg Asn Ser Cys Gly  
 565 570 575  
 Ala Val Leu Gln Asp Gly Lys Leu Phe Asn Asp Thr Ile Leu Tyr Asn  
 580 585 590  
 Ile Thr Leu Glu Asp Glu Glu Met Asn Val Asn Gln Lys Gln Leu Val  
 595 600 605  
 Lys Ala Ile Gln Leu Ala Asn Ala Glu Asn Phe Ile Asn Ala Arg Pro  
 610 615 620  
 Leu Lys Leu Tyr Thr Pro Leu Gly Thr Asn Gly Ser Gly Leu Ser Gln  
 625 630 635 640  
 Gly Gln Lys Gln Arg Ile Leu Ile Ala Arg Ala Ile Tyr Lys Asn Pro  
 645 650 655  
 Asp Phe Ile Phe Leu Asp Glu Ala Thr Asn Ser Leu Asp Thr Asn Asn  
 660 665 670  
 Glu Lys Gln Ile Ser Lys Asn Leu Glu Thr Ile Leu Glu Gly Lys Thr  
 675 680 685  
 Ala Ile Val Ile Ala His Arg Leu Ser Thr Val Lys Asn Ala His Asn

690 695 700  
 Ile Val Val Met Glu Lys Gly Lys Ile Val Glu Gln Gly Thr His Gln  
 705 710 715 720  
 Glu Leu Ile Asn Leu Lys Gly Ile Tyr Tyr Asp Leu Ile Ser Ser Gln  
 725 730 735  
 Leu Glu Ile Gly  
 740

<210> 8428  
 <211> 445  
 <212> PRT  
 <213> B.fragilis

<400> 8428

Leu Asn Glu Lys His Met Arg Gln Phe Ile Leu Ile Met Ile Cys Ile  
 1 5 10 15  
 Leu Leu Gln Val Ile His Val His Ala Gly Ser Lys Asp Ile Thr Trp  
 20 25 30  
 Lys Trp Asp Tyr Ser Glu Ala Asp Asp Ile Phe Ile Asp Leu Leu Gly  
 35 40 45  
 Lys Ala Ala Thr Gly Phe Met Glu Thr Asn Thr Pro Asn Cys Tyr Gly  
 50 55 60  
 Gly Lys Leu Val Val Lys Leu Pro Glu Gly Leu His Phe Lys Gln Thr  
 65 70 75 80  
 Glu Ala Pro Ala Phe Leu Leu Ile Gly Asn Ala Glu Glu Ile Ala Phe  
 85 90 95  
 Asn Val Asp Val Asn Asp Ser Met Ala Ile Leu Ser Leu Lys Thr Ser  
 100 105 110  
 Ser Val Gln Thr Val Pro Ser Glu Ala Ile Asn Ile Thr Leu Asn Pro  
 115 120 125  
 Lys Ala Ile Lys Gly Lys Leu Arg Lys Gly Met Asn Thr Thr Gly Arg  
 130 135 140  
 Leu Ser Phe His Pro Ser Glu Ile Pro Thr Val Phe Lys Ser Pro Ile  
 145 150 155 160  
 Thr Gly Arg Thr Tyr His Leu Val Phe Asn Asp Glu Phe Asp Asp Gly  
 165 170 175  
 Val Ile Asp Thr Leu Lys Trp Asp Thr Arg Ser Arg Arg Ser Pro Phe  
 180 185 190  
 Thr Arg Arg Gly Met Tyr Gln Glu Lys Pro Tyr Tyr Val Leu Cys His  
 195 200 205  
 Glu Asp Trp Thr Lys Glu Leu His Gly Glu Leu Arg Leu Glu Val Ser  
 210 215 220  
 Lys Tyr Ser Thr Gln Asn Asn Val Val Met Thr Gly Gly Ile Leu Ser  
 225 230 235 240  
 Leu Gly Arg Phe Met Ala Arg Tyr Gly Tyr Tyr Glu Thr Lys Ala Ser  
 245 250 255  
 Phe Arg Asp Cys Ile Gly Glu Gly Tyr Trp Pro Ala Phe Trp Ile His  
 260 265 270  
 Phe Asp Glu Ala Asp Lys Tyr Gly Lys Gly Thr Glu Ile Asp Val Phe  
 275 280 285  
 Glu Tyr Ile Pro Lys Asp Lys Gln Ile Phe Gln Thr Leu His Trp Tyr  
 290 295 300  
 Lys Lys Gln Ala Met Glu Glu Gln Gln Ser Glu Val Gln His Ala Ala  
 305 310 315 320  
 Leu Asp Tyr Asp Lys Ser Gly Gln Phe Lys Glu His Arg Ser Ser Thr  
 325 330 335  
 Glu Tyr Phe Val Leu Asp Glu Ala Gln Ser Lys Glu His Thr Phe Ala  
 340 345 350  
 Val Glu Trp Thr Pro Glu Glu Leu Ile Phe Tyr Thr Asp Gly Lys Val

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      355              360              365
Thr Arg Arg Val Asn Arg Lys Asp Asp Pro Lys Gln Val Pro Ser Ala
  370              375              380
Tyr Gln Met Val Tyr Phe Ser Cys Ser Ala Gly Glu Trp Gly Gly Asn
  385              390              395              400
Val Met Glu Asn Gln Val Pro Ala Tyr Val Tyr Phe Asp Tyr Cys Arg
      405              410              415
Cys Tyr Gln Glu Ser Asp Gln Asp Ala Ile Tyr Thr Val Lys Gly Asn
      420              425              430
Gly Met Lys Val Ser Ala Ser Arg Arg Val Gly Lys Leu
      435              440              445

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<210> 8429  
 <211> 149  
 <212> PRT  
 <213> B.fragilis

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<400> 8429
Ile Cys Arg Asn Asn Met Ser Gly Arg Pro Ile His Ile His Val Leu
  1              5              10              15
Ser Pro Asp Arg Pro Ile Asn Ile Lys Ile Phe Phe Met Ala Glu His
      20              25              30
Asn Leu Leu Gly Lys Ala Gly Glu Asp Ala Ala Val Asp Tyr Leu Glu
      35              40              45
Arg His Asp Tyr Val Ile Arg His Arg Asn Trp Arg Lys Gly His Phe
      50              55              60
Glu Leu Asp Ile Val Ala Ala Lys Asn Gly Glu Leu Ile Ile Val Glu
      65              70              75              80
Val Lys Thr Arg Ser Asp Thr Asp Phe Ala Leu Pro Gln Asp Ala Val
      85              90              95
Thr Pro Gln Lys Ile Arg Arg Thr Val Ile Ala Ala Asp Thr Tyr Ile
      100              105              110
Lys Leu Phe Gln Ile Asp Glu Pro Val Arg Phe Asp Ile Ile Thr Val
      115              120              125
Ile Gly Lys Thr Gly Asn Phe Arg Ile Glu His Ile Lys Glu Ala Phe
      130              135              140
Tyr Pro Pro Leu Phe
      145

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<210> 8430  
 <211> 120  
 <212> PRT  
 <213> B.fragilis

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<400> 8430
Ser Phe Met Asn Ile Glu Ser Ala Arg Glu Tyr Cys Leu Arg Lys Lys
  1              5              10              15
Ala Val Thr Glu Cys Phe Pro Phe Asp Glu Tyr Ser Leu Val Met Lys
      20              25              30
Val Met Asp Lys Met Phe Ala Leu Ile Asp Leu Glu Gly Ala Asn Thr
      35              40              45
Ile Ser Leu Lys Cys Asp Pro Asp Tyr Ala Ile Glu Leu Arg Glu His
      50              55              60
Tyr Ser Ala Ile Glu Gly Ala Tyr His Phe His Lys Lys Tyr Trp Asn
      65              70              75              80
Gln Val Tyr Phe Asp Arg Asp Ala Asp Asp Lys Leu Ile Lys Gln Leu
      85              90              95
Ile Asp His Ser Tyr Asp Glu Val Met Lys Lys Phe Thr Lys Lys Leu
      100              105              110

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Arg Thr Glu Tyr Asp Ala Leu Pro  
115 120

<210> 8431  
<211> 232  
<212> PRT  
<213> B.fragilis

<400> 8431  
Ile Lys Met Lys Lys Met Lys Thr Leu Thr Leu Phe Leu Ser Leu Leu  
1 5 10 15  
Phe Ser Phe Pro Phe Val Leu Ser Ala Gln Met Val Gly Glu Thr Leu  
20 25 30  
Gln Lys Val Ser Ala Ala Leu Asp Asn Arg Gln Trp Asp Gln Ala Val  
35 40 45  
Thr Leu Phe Arg Gln Ala Val Asn Thr Asn Val Glu Lys Ala Glu Met  
50 55 60  
Phe Tyr Trp Thr Gly Val Asp Lys Ser Leu Glu Val Ser Ser Arg Met  
65 70 75 80  
Gly Arg Glu Leu Ala Ala Tyr Tyr Lys Lys Ser Arg Ser Tyr Asp Lys  
85 90 95  
Ala Tyr Leu Phe Tyr Lys Glu Leu Leu Gln Lys Ser Pro Asn Asp Val  
100 105 110  
Asn Cys Leu Val Ser Cys Ala Glu Met Glu Val Cys Arg Gly Arg Glu  
115 120 125  
Ser Glu Ala Leu Glu Thr Tyr Arg Lys Val Leu Ser Leu Asp Ala Asp  
130 135 140  
Asn Leu Ala Ala Asn Ile Phe Ile Gly Asn Tyr Leu Tyr Leu Lys Ala  
145 150 155 160  
Glu Arg Glu Lys Lys Gln Leu Glu Ala Asp Tyr Lys Lys Ile Ser Ala  
165 170 175  
Pro Thr Arg Met Gln Tyr Ala Arg Tyr Arg Asp Gly Leu Ser Arg Val  
180 185 190  
Met Ser Thr Gly Tyr Gly Lys Ala Arg Glu Tyr Leu Gln Lys Val Ile  
195 200 205  
Ser Gln Phe Pro Ser Thr Glu Ala Gln Lys Thr Leu Glu Arg Ile Lys  
210 215 220  
Leu Ile Glu Lys Glu Val Asn Arg  
225 230

<210> 8432  
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<212> PRT  
<213> B.fragilis  
  
<220>  
<221> UNSURE  
<222> (45), (434), (449), (679), (683), (684), (685), (686), (687)  
<223> Identity of amino acid sequences at the above locations are unknown.

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Tyr Arg Arg Lys Ser Thr Arg Thr Phe His Pro Tyr Leu Gly Leu Met  
1 5 10 15  
His Thr Ala Glu Phe Asn Asn Leu Ile Val Lys Glu Glu Lys Arg  
20 25 30  
Pro His His Pro Phe Ser Val Ile Ser Asp Glu Pro Xaa Trp Gly Pro  
35 40 45  
Ala Asp Ile Lys Ser Tyr Met Lys Met Asn Gly Val Pro Met Val Gly  
50 55 60

Ile	Val	Val	Ile	Pro	Gln	Arg	Gly	Ala	Asn	His	Ile	Lys	Ile	Ala	Asp
65					70				75						80
Ala	Val	Tyr	Glu	Arg	Met	Glu	Lys	Met	Gln	Lys	Asp	Leu	Pro	Glu	Asp
				85					90						95
Val	Lys	Tyr	Ser	Tyr	Gly	Phe	Asp	Asn	Thr	Lys	Phe	Ile	Arg	Ala	Ser
			100					105					110		
Ile	Ser	Glu	Val	Lys	Glu	Thr	Val	Tyr	Val	Ala	Phe	Ile	Leu	Val	Ile
		115					120						125		
Ile	Ile	Ile	Phe	Leu	Phe	Leu	Arg	Asp	Trp	Arg	Val	Thr	Leu	Val	Pro
	130					135					140				
Cys	Ile	Val	Ile	Pro	Val	Ser	Leu	Ile	Gly	Ala	Phe	Phe	Val	Met	Tyr
145					150					155					160
Leu	Ala	Asp	Phe	Ser	Ile	Asn	Val	Leu	Ser	Met	Leu	Ala	Val	Val	Leu
				165					170						175
Ala	Val	Gly	Leu	Val	Val	Asp	Asp	Ala	Ile	Val	Met	Thr	Glu	Asn	Ile
			180					185							190
Tyr	Val	Arg	Ile	Glu	Lys	Gly	Met	Pro	Pro	Lys	Glu	Ala	Gly	Ile	Glu
		195					200						205		
Gly	Ala	Lys	Glu	Ile	Phe	Phe	Ala	Val	Ile	Ser	Thr	Thr	Ile	Thr	Leu
	210					215									220
Val	Ala	Val	Phe	Phe	Pro	Ile	Val	Phe	Met	Glu	Gly	Met	Thr	Gly	Arg
225					230					235					240
Leu	Phe	Arg	Glu	Phe	Ser	Ile	Val	Ile	Ser	Gly	Ser	Val	Ile	Ile	Ser
				245					250						255
Ser	Phe	Ala	Ala	Leu	Thr	Phe	Thr	Pro	Met	Leu	Ala	Thr	Lys	Leu	Leu
			260					265							270
Val	Lys	Arg	Glu	Lys	Gln	Asn	Trp	Phe	Tyr	Leu	Lys	Thr	Glu	Pro	Phe
		275					280								285
Phe	Glu	Gly	Met	Ser	Arg	Leu	Tyr	Ser	Arg	Ser	Leu	Ala	Val	Phe	Leu
	290					295					300				
His	Lys	Arg	Trp	Ile	Ala	Leu	Pro	Phe	Val	Ala	Ile	Thr	Ile	Gly	Ile
305					310					315					320
Ile	Ala	Phe	Leu	Trp	Asn	Tyr	Ile	Pro	Ala	Glu	Met	Ala	Pro	Leu	Glu
			325						330						335
Asp	Arg	Ser	Gln	Ile	Ser	Ile	Asn	Thr	Arg	Gly	Ala	Glu	Gly	Val	Thr
			340					345							350
Tyr	Glu	Tyr	Ile	Arg	Asp	Tyr	Thr	Glu	Asp	Ile	Asn	Asp	Leu	Val	Asp
		355					360								365
Ser	Ile	Val	Pro	Asp	Ala	Glu	Ser	Val	Thr	Ala	Arg	Val	Ser	Ser	Gly
	370					375					380				
Ser	Gly	Asn	Val	Arg	Ile	Thr	Leu	Lys	Asp	Met	Lys	Asp	Arg	Asp	Tyr
385					390					395					400
Thr	Gln	Met	Asp	Val	Ala	Glu	Lys	Leu	Ser	Ala	Ala	Val	Gln	Thr	Lys
				405					410						415
Thr	Met	Ala	Arg	Ser	Phe	Val	Gln	Gln	Ser	Ser	Ser	Phe	Gly	Gly	Arg
			420					425							430
Arg	Xaa	Gly	Met	Pro	Val	Gln	Tyr	Val	Leu	Gln	Ala	Thr	Asn	Ile	Glu
		435					440								445
Xaa	Leu	Gln	Glu	Val	Leu	Pro	Lys	Phe	Met	Ala	Lys	Val	Tyr	Glu	Asn
	450					455					460				
Pro	Val	Phe	Gln	Met	Ala	Asp	Val	Asp	Leu	Lys	Phe	Ser	Lys	Pro	Glu
465					470					475					480
Ala	Arg	Ile	Asn	Ile	Asn	Arg	Asp	Lys	Ala	Ser	Ile	Met	Gly	Val	Ser
				485					490						495
Thr	Arg	Asn	Ile	Ala	Gln	Thr	Leu	Gln	Tyr	Gly	Leu	Ser	Gly	Gln	Arg
		500						505							510
Met	Gly	Tyr	Phe	Tyr	Met	Asn	Gly	Lys	Gln	Tyr	Glu	Ile	Leu	Gly	Glu
		515					520								525
Ile	Asn	Arg	Gln	Gln	Arg	Asn	Thr	Pro	Ala	Asn	Leu	Lys	Ser	Ile	Tyr

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530		535		540
Ile Arg Ser Asp Lys Gly	Asp Met Val Gln Leu	Asp Asn Leu Ile Glu		
545	550	555		560
Leu Thr Gly Gly Ile Ala	Pro Pro Lys Leu Tyr	Arg Tyr Asn Arg Phe		
	565	570		575
Val Ser Ala Thr Val Ser	Ala Gly Leu Ala Glu	Gly Lys Thr Ile Gly		
	580	585		590
Gln Gly Leu Asp Glu Met	Asp Lys Ile Ala Lys	Glu Thr Leu Asp Asp		
	595	600		605
Thr Phe Arg Thr Ala Leu	Thr Gly Asp Ser Lys	Glu Tyr Arg Glu Ser		
	610	615		620
Ser Ser Ser Leu Met Phe	Ala Phe Ile Leu Ala	Ile Val Leu Ile Tyr		
625	630	635		640
Leu Ile Leu Ala Ala Gln	Phe Glu Ser Phe Lys	Asp Pro Leu Ile Ile		
	645	650		655
Met Leu Thr Val Pro Leu	Ala Ile Ala Gly Ala	Leu Val Phe Thr Thr		
	660	665		670
Gly Leu Glu Gly Ser Asp	Xaa Cys Ser Cys Xaa	Xaa Xaa Xaa Xaa Arg		
	675	680		685
Ser Ile				
690				

<210> 8433  
 <211> 186  
 <212> PRT  
 <213> B.fragilis

<400> 8433
Ala Met Arg Lys Asn Phe Ser Thr Ile Leu Ile Val Gly Ala Ala Leu
1 5 10 15
Leu Val Ala Ser Cys Val Gln Gln Lys Gly Ser Phe Ser Pro Val Asp
20 25 30
Tyr Val Asn Pro Leu Met Gly Thr Glu Ser Thr Tyr Ala Phe Ser His
35 40 45
Gly Asn Thr Tyr Pro Ala Val Ala Val Pro Trp Gly Met Asn Phe Trp
50 55 60
Ser Pro Gln Thr Gly Glu Asn Gly Ser Gly Trp Met Tyr Thr Tyr Thr
65 70 75 80
Asp Ser Leu Ile Arg Gly Phe Arg Gln Thr His Gln Pro Ser Pro Trp
85 90 95
Ile Asn Asp Tyr Gly Thr Phe Ser Val Met Pro Leu Ser Gly Val Leu
100 105 110
Lys Met Asp His Lys Glu Arg Gly Val Pro Phe Ser His Thr Gln Glu
115 120 125
Glu Ala Ala Pro Tyr Ser Tyr Ser Val Thr Phe Ala Asp Gly Leu Arg
130 135 140
Thr Glu Leu Ser Ala Thr Ser Arg Gly Ala Val Phe Glu Val Thr Phe
145 150 155 160
Pro Gln Asp Ser Ala Gln Tyr Ile Val Val Asp Ala Tyr Asn Gly Gly
165 170 175
Ser Ala Leu Thr Ile Asp Arg Glu Asn Arg
180 185

<210> 8434  
 <211> 525  
 <212> PRT  
 <213> B.fragilis  
 <400> 8434

Lys Asn Thr Asp Ser Met Asn Val Asn Lys Pro Thr Thr Glu Lys Lys  
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 Leu Ile Asp Leu Asn Asn Asp Ile Ile His Asn Phe Asp Val Ser Ile  
 20 25 30  
 Val Met Ser Phe Tyr Lys Arg Tyr Thr Glu Phe Lys Lys Val Leu Pro  
 35 40 45  
 His Asn Ala Pro Tyr Leu Gln Arg Asn Gly Ile Glu Val Ile Ile Val  
 50 55 60  
 Leu Asp Asp Pro Asp Glu Lys Ser Glu Leu Leu Met Leu Leu Gln Asn  
 65 70 75 80  
 Tyr Pro Phe Ile Asn Trp Lys Leu Ile Ile Asn Glu Arg Lys His Ala  
 85 90 95  
 Pro Arg Asn His Ala Ser Val Leu Asn Val Gly Leu Lys His Ala Thr  
 100 105 110  
 Lys Lys Tyr Ile Leu Gln Ile Asp Pro Glu Val Glu Phe Leu Thr Asp  
 115 120 125  
 Ile Ile Trp Gln Met Arg Asp Ala Ile Glu Lys Tyr Pro Met His Tyr  
 130 135 140  
 Ile Leu Ala Met Met Ala Tyr Val Pro Tyr Glu Gln Glu Leu Thr Glu  
 145 150 155 160  
 Asn Asn Ile Lys Glu Leu Asp Phe Ile Pro Trp Gly Asn Leu Met Val  
 165 170 175  
 Glu Arg Asn His Leu Tyr Lys Leu His Gly Tyr Asp Glu Thr Phe Ile  
 180 185 190  
 Thr Trp Gly Glu Asp Asn Asn Met Arg Ala Arg Leu Asp Met Ser  
 195 200 205  
 Gly Ile Lys Lys Phe Ile Leu Pro Glu Ala Lys Thr Ile His Arg Glu  
 210 215 220  
 Lys Asn Tyr Asp Pro Asn Glu Arg Ser Lys Arg Ile Asn Lys His Ser  
 225 230 235 240  
 Ile Ser Asp Trp Arg Lys Met Asn Tyr Pro Ser Glu Ala Ile Ala Asn  
 245 250 255  
 Lys Asp Ile Trp Gly Ser Glu Phe Asn Lys Val Ile Tyr Asp Trp Gln  
 260 265 270  
 Asp Asn Gln Tyr Ala Lys Asp Leu Cys Tyr Thr Tyr Leu Gln Gln Phe  
 275 280 285  
 Ile Gly Phe Glu Ile Arg His Pro Ala Ala Phe Arg Lys Arg His Lys  
 290 295 300  
 Lys Ile Val Leu Cys Gln Ala Tyr Asn Glu Glu Lys Leu Ile Glu Gly  
 305 310 315 320  
 Phe Leu Thr Asn Met Ala Ser Tyr Phe Asp Gly Ile Ile Leu Leu Asp  
 325 330 335  
 Asp Glu Ser Thr Asp Arg Thr Trp Asp Leu Ala Ile His Asp Lys Ile  
 340 345 350  
 Leu Leu Lys Val Lys Lys Lys Arg Ser Gly Phe Asn Asp Leu Glu Asn  
 355 360 365  
 Arg Asn Ile Leu Leu Asp Leu Ser Ala Phe Phe Gln Ser Glu Trp Phe  
 370 375 380  
 Cys Phe Met Asp Ile Asp Glu Arg Phe Asp Glu Arg Phe Thr Asn Phe  
 385 390 395 400  
 Ser Glu Phe Glu Asn Asn Lys Glu Ile His Val Val Ser Phe Arg Gly  
 405 410 415  
 Val Tyr Leu Trp Asn Asp Glu Gln Ser Tyr Lys Gly Asp Ile Pro Asn  
 420 425 430  
 Ser Asn Lys Gly Ile Leu Thr Val Tyr Arg Met Phe Arg Pro Ile Gly  
 435 440 445  
 His Thr His Ile Asn Thr His Lys Lys Leu His Phe Ile Ala Thr Pro  
 450 455 460  
 Tyr Phe Thr Asn Thr Trp Gln Ser Asn Ile Leu Phe Lys Asp Tyr Gly

465 470 475 480  
 Ser Met Lys Glu Asn Asp Arg Ile Arg Lys Tyr Glu Arg Tyr Ile Gln  
 485 490 495  
 Glu Asp Gln Gln Lys Asp Met Ser Ser Gly Tyr Asp Tyr Leu Leu Asn  
 500 505 510  
 Ser Glu Asn Leu Tyr Gln Leu Asp Lys Ile Glu Glu Tyr  
 515 520 525

<210> 8435  
 <211> 74  
 <212> PRT  
 <213> B.fragilis

<400> 8435  
 Glu Asn Tyr Asp Ile Phe Ala Thr Lys Thr Lys Lys Cys Leu Thr Gly  
 1 5 10 15  
 Asn Asp Arg Ile Asp Tyr Asp Cys His Thr Leu Glu Glu Ile Gly Leu  
 20 25 30  
 Thr Leu Leu Lys Asn Ser His Ser Leu Phe Phe Ser Val Phe Leu Ile  
 35 40 45  
 Ser Gln Lys Ala Tyr Ile Arg Ser Ser Val Ser Phe Gln Val Arg Cys  
 50 55 60  
 Arg Asp Arg Gln Gln Gly Ile Phe Val Ser  
 65 70

<210> 8436  
 <211> 155  
 <212> PRT  
 <213> B.fragilis

<400> 8436  
 Asp Arg Lys Glu Pro Phe Gln Lys Glu Thr Ile Asn Gln His Thr Ser  
 1 5 10 15  
 Met Glu Ile Lys Ile Gln Ser Leu Glu Gln Ile His Glu Ala Ala Arg  
 20 25 30  
 Glu Phe Ile Ser Ala Met Gly Asp Asn Thr Val Phe Ala Leu Tyr Gly  
 35 40 45  
 Lys Met Gly Ala Gly Lys Thr Phe Val Lys Ala Leu Cys Glu Glu  
 50 55 60  
 Leu Gly Val Ser Asp Val Ile Thr Ser Pro Thr Phe Ala Ile Val Asn  
 65 70 75 80  
 Glu Tyr Arg Ser Asp Glu Asn Gly Glu Leu Ile Tyr His Phe Asp Phe  
 85 90 95  
 Tyr Arg Ile Lys Lys Leu Ser Glu Val Tyr Asp Met Gly Tyr Glu Asp  
 100 105 110  
 Tyr Phe Tyr Ser Gly Ala Leu Cys Phe Ile Glu Trp Pro Glu Leu Val  
 115 120 125  
 Glu Glu Leu Leu Pro Gly Asp Ala Val Lys Val Thr Ile Glu Glu Leu  
 130 135 140  
 Glu Asp Gly Thr Arg Lys Ile Val Ile Asn Asp  
 145 150 155

<210> 8437  
 <211> 531  
 <212> PRT  
 <213> B.fragilis

<400> 8437  
 Ile Thr Met Asp Asn Thr Arg Ser Val Tyr Gly Ile Asp Leu Gly Thr



1	5	10	15
Thr Tyr Ser Cys Ile Ala Gln Val Asp Lys Phe Asp Gln Ala Ile Val			
20	25	30	
Leu Arg Asn Phe Glu Gly Asp Ala Thr Thr Pro Ser Ala Val Tyr Phe			
35	40	45	
Glu Asp Met Asp His Val Val Val Gly Lys Glu Ala Lys Gly Met Leu			
50	55	60	
Ala Thr Glu Pro Thr Lys Thr Ala Val Phe Ile Lys Arg His Ile Gly			
65	70	75	80
Val Asp Asp Ser Phe Asp Lys Asn Thr Asn Glu Phe Pro Tyr His Tyr			
85	90	95	
Asp Pro Thr Glu Ile Ser Ala Phe Ile Leu Lys Lys Leu Val Lys Asp			
100	105	110	
Ala Asn Asp Leu Gly Asp Asn Pro Glu Pro Ile Lys Asp Val Val Ile			
115	120	125	
Thr Cys Pro Ala Tyr Phe Gly Thr Lys Glu Arg Met Gln Thr Lys Gln			
130	135	140	
Ala Gly Glu Ile Ala Gly Leu Asn Val Leu Ser Ile Ile Asn Glu Pro			
145	150	155	160
Thr Ala Ala Ala Ile Ser Tyr Gly Val Lys Thr Asp Gln Lys Lys Thr			
165	170	175	
Val Leu Val Tyr Asp Leu Gly Gly Gly Thr Phe Asp Val Thr Leu Ile			
180	185	190	
Asn Val Asn Gly Gly Ala Ile Lys Val Ile Ala Thr Gly Gly Asp His			
195	200	205	
His Leu Gly Gly Val Asp Trp Asp Thr Ala Leu Ala Glu Tyr Met Leu			
210	215	220	
Ala Ala Phe Asn Glu Gln Asn Asn Thr Ser Tyr Ser Phe Glu Asp Arg			
225	230	235	240
Leu Asp Leu Lys Tyr Glu Leu Leu Leu Leu Ala Glu Asp Lys Lys Lys			
245	250	255	
Val Leu Thr Ala Lys Gln Thr Ala Lys Ala Thr Tyr Gln Tyr Glu Gly			
260	265	270	
Asn Ser Ala Arg Ile Glu Ile Ser Arg Glu Leu Phe Asn Ser Leu Thr			
275	280	285	
Glu Arg Lys Leu Asp Glu Thr Ile Asp Ala Thr Lys Lys Val Ile Ala			
290	295	300	
Ile Ala Lys Glu Lys Gly Tyr Asn Asn Ile Asp Glu Ile Leu Leu Val			
305	310	315	320
Gly Gly Ser Ser Arg Met Pro Gln Ile Lys Glu Arg Val Asp Lys Glu			
325	330	335	
Phe Asn Cys Asp Ala Lys Leu Thr Asp Pro Asp Glu Cys Val Ala Lys			
340	345	350	
Gly Ala Ala Ile Tyr Ala Met Asn Ala Ala Tyr Ser Gln Ala Val Arg			
355	360	365	
Asp Tyr Glu Glu Gly Glu Ser Asp Asp Lys Pro Ala Pro Leu Arg Gly			
370	375	380	
Asp Arg Thr Thr Val Val Asn Val Thr Ser Lys Thr Tyr Gly Thr Asp			
385	390	395	400
Val Ile Ile Glu Gly Gln Ser Met Val Gln Asn Leu Ile Phe Ala Asn			
405	410	415	
Ser Ser Leu Pro Thr Lys Arg Ile Glu Thr Phe Thr Thr Ser Ile Pro			
420	425	430	
Asn Gln Arg Gly Val Ser Val Lys Val Phe Glu Ser Asp Phe Thr Asn			
435	440	445	
Met Glu Thr Glu Ser Ile Val Glu Glu Arg Phe Cys Thr Leu Ile Asp			
450	455	460	
Asp His Thr Leu Lys Leu Ser Lys Asp Trp Pro Gln Gly Thr Gln Ile			
465	470	475	480

Ser Val Thr Tyr Gln Ile Asp Gln Glu Gly Ile Leu His Gly Leu Ala  
 485 490 495  
 Tyr Val Glu Asn Asp Lys Leu Glu Phe Asp Leu Lys Ile Thr Gly Val  
 500 505 510  
 Lys Cys Glu Glu Leu Arg Lys Ser Lys Ala Ile Ile Asp Lys Ala  
 515 520 525  
 Ser Val Glu  
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<400> 8438

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 Leu Ser Ile Gly Thr Arg Ser Asp Pro Arg Met His Ser Asn Gln Lys  
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 Phe Arg Ile Arg Ala Ile Ser Ile Phe Asn Pro Ser Ala Asn Asn Cys  
 35 40 45  
 Tyr His His Ala Leu Cys Lys Arg His Lys Asn Pro Val Asn Asn Lys  
 50 55 60  
 Pro Met Lys Thr Phe Lys Arg Phe Leu Phe Ile Cys Ile Gly Leu Phe  
 65 70 75 80  
 Ile Ile Val Leu Ser Thr Gln Ala Leu Glu Lys Tyr Glu Val Thr Ala  
 85 90 95  
 Asn Thr Phe Leu Asn Ile Arg Ser His Gly Ser Thr Asn Ala Pro Val  
 100 105 110  
 Ile Gly Thr Ile Asn His Gly Gly Ile Val Asn Val Glu Ser Ile Asp  
 115 120 125  
 Gly Glu Trp Ala Lys Val Ser Phe Asn Gly Gly Tyr Gly Tyr Val Ser  
 130 135 140  
 Thr Thr Tyr Ile Arg Pro Val Thr Pro Thr Pro Pro Ala Lys Ala Pro  
 145 150 155 160  
 Thr Asn Thr Leu Ser Asp Trp Phe Arg Gln Thr Asn Tyr Asp Cys Arg  
 165 170 175  
 Pro Leu Val Tyr Ile Ile Leu Gly Leu Ser Ile Val Leu Phe Ile Leu  
 180 185 190  
 Arg Met Arg Arg Gly Glu Ser Thr Pro Leu Glu Asp Ser Glu His Thr  
 195 200 205  
 Ile Asn Leu Ser Leu Phe Ile Thr Val Cys Leu Leu Glu Leu Phe Tyr  
 210 215 220  
 Val Phe Ser Met Gly Ala Asn Ser Ile Trp Phe Cys Thr Pro Asp Lys  
 225 230 235 240  
 Ile Gly Trp Leu Trp Thr Ile Ile Asn Phe Phe Ile Phe Gly Ala Val  
 245 250 255  
 Val Phe Asn Gln Trp Met Cys Phe Phe Asn Thr Leu Asn Asp Val Gln  
 260 265 270  
 Tyr Asn Ser Tyr Ala Thr Phe Asn Trp Thr Trp Gly Ile Tyr Thr Trp  
 275 280 285  
 Gly Ile Cys Ile Ile Gly Ala Ile Ile Cys Gly Phe Phe Phe Val Gly  
 290 295 300  
 Phe Leu Pro Val Val Gly Ile Gly Phe Leu Val Gly Gln Ser Val Gln  
 305 310 315 320  
 Thr Gly Ile Ile Phe Asn Lys Val Leu Pro Lys Gly Gly Trp Lys His  
 325 330 335  
 Ala Cys Ile Cys Thr Leu Thr Tyr Leu Ile Gly Ser Thr Ala Thr Val  
 340 345 350

Leu Ile Val Ala His Phe Leu Ile Leu Leu Leu Ile Val Leu Ile Ala  
                   355                                  360                                  365  
 Leu Phe Leu Leu Ser Leu Leu Gly Lys Ser Ser Ser Ser Ser Gly Gly  
                   370                                  375                                  380  
 Lys Arg Cys Ser Asn Cys Ser His Leu Ser Gly Ser Ser Cys Asn Leu  
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 Ser Gly Arg Tyr Ile Ser Ser Pro Ser Thr Thr Tyr Cys Asp Asn Tyr  
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 Thr Cys Leu Glu Thr Ile Ile Ile Trp Lys Cys Ser Ala Ile Lys Arg  
                   20                                  25                                  30  
 Gln Gly Leu Lys Pro Asn His Glu Ala Tyr Pro Leu Gln Val Asn Val  
                   35                                  40                                  45  
 Asn Lys His Leu Ile Glu Tyr Ser Lys Lys Tyr Asn Val Lys Leu Ile  
                   50                                  55                                  60  
 Cys Thr Asn Asp Val His Phe Val Asn Glu Glu His Ala Glu Ala His  
 65                                  70                                  75                                  80  
 Asp Arg Leu Ile Cys Leu Ser Thr Gly Lys Asp Leu Asp Asp Pro Asn  
                                   85                                  90                                  95  
 Arg Met Tyr Tyr Thr Lys Gln Glu Trp Met Lys Thr Lys Ala Glu Met  
                   100                                  105                                  110  
 Asn Glu Leu Phe Ala Asp Val Pro Glu Ala Leu Ser Asn Thr Leu Glu  
                   115                                  120                                  125  
 Ile Leu Asp Lys Val Glu Tyr Tyr Ser Ile Asp His Ala Pro Ile Met  
                   130                                  135                                  140  
 Pro Thr Phe Ala Ile Pro Glu Asp Phe Gly Thr Glu Glu Gly Tyr Arg  
 145                                  150                                  155                                  160  
 Gln Lys Tyr Thr Glu Lys Asp Leu Phe Asp Glu Phe Thr Gln Asp Glu  
                   165                                  170                                  175  
 Asn Gly Asn Val Leu Ser Glu Glu Ala Ala Lys Asp Lys Ile Lys  
                   180                                  185                                  190  
 Arg Leu Gly Gly Tyr Asp Lys Leu Tyr Arg Ile Lys Leu Glu Ala Asp  
                   195                                  200                                  205  
 Tyr Leu Lys Lys Leu Thr Phe Asp Gly Ala Lys Lys Phe Tyr Gly Asp  
                   210                                  215                                  220  
 Pro Leu Ser Pro Glu Val Lys Glu Arg Leu Val Phe Glu Leu His Ile  
 225                                  230                                  235                                  240  
 Met Lys Thr Met Gly Phe Pro Gly Tyr Phe Leu Ile Val Gln Asp Phe  
                   245                                  250                                  255  
 Ile Ala Ala Gly Arg Asn Met Gly Val Ser Ile Gly Pro Gly Arg Gly  
                   260                                  265                                  270  
 Ser Ala Ala Gly Ser Ala Val Ala Tyr Cys Leu Gln Ile Thr Lys Ile  
                   275                                  280                                  285  
 Asp Pro Ile Lys Tyr Asp Leu Leu Phe Glu Arg Phe Leu Asn Pro Asp  
                   290                                  295                                  300  
 Arg Ile Ser Leu Pro Asp Ile Asp Ile Asp Phe Asp Asp Asp Gly Arg  
 305                                  310                                  315                                  320  
 Gly Glu Val Leu Arg Trp Val Thr Glu Lys Tyr Gly Gln Glu Lys Val  
                   325                                  330                                  335

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Ala His Ile Ile Thr Tyr Gly Thr Met Ala Thr Lys Leu Ala Ile Lys  
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 Asp Val Ala Arg Val Gln Lys Leu Pro Leu Ala Glu Ser Asp Arg Leu  
 355 360 365  
 Ala Lys Leu Val Pro Asp Lys Ile Pro Asp Lys Lys Leu Asn Leu Lys  
 370 375 380  
 Asn Ala Ile Glu Tyr Val Pro Glu Leu Gln Ala Ala Glu Ala Ser Pro  
 385 390 395 400  
 Asp Pro Leu Val Arg Asp Thr Met Lys Tyr Ala Lys Met Leu Glu Gly  
 405 410 415  
 Asn Val Arg Gly Thr Gly Val His Ala Cys Gly Thr Ile Ile Cys Arg  
 420 425 430  
 Asp Asp Ile Thr Asp Trp Val Pro Val Ser Thr Ala Asp Asp Lys Glu  
 435 440 445  
 Thr Gly Glu Lys Met Leu Val Thr Gln Tyr Glu Gly Ser Val Ile Glu  
 450 455 460  
 Asp Thr Gly Leu Ile Lys Met Asp Phe Leu Gly Leu Lys Thr Leu Ser  
 465 470 475 480  
 Ile Ile Lys Glu Ala Val Glu Asn Ile Arg Leu Ser Lys Gly Met Glu  
 485 490 495  
 Leu Asp Ile Asp Ser Ile Ser Ile Glu Asp Pro Ala Thr Tyr Lys Leu  
 500 505 510  
 Tyr Ser Asp Gly Arg Thr Ile Gly Thr Phe Gln Phe Glu Ser Ala Gly  
 515 520 525  
 Met Gln Lys Tyr Leu Arg Glu Leu Gln Pro Ser Thr Phe Glu Asp Leu  
 530 535 540  
 Ile Ala Met Asn Ala Leu Tyr Arg Pro Gly Pro Met Asp Tyr Ile Pro  
 545 550 555 560  
 Asp Phe Ile Asp Arg Lys His Gly Arg Lys Pro Ile Glu Tyr Asp Ile  
 565 570 575  
 Pro Val Met Glu Lys Tyr Leu Lys Asp Thr Tyr Gly Ile Thr Val Tyr  
 580 585 590  
 Gln Glu Gln Val Met Leu Leu Ser Arg Leu Leu Ala Asp Phe Thr Arg  
 595 600 605  
 Gly Glu Ser Asp Ala Leu Arg Lys Ala Met Gly Lys Lys Leu Arg Asp  
 610 615 620  
 Lys Leu Asp His Met Lys Pro Lys Phe Val Glu Gly Gly Arg Lys Asn  
 625 630 635 640  
 Gly His Asp Pro Lys Val Leu Glu Lys Ile Trp Ala Asp Trp Glu Lys  
 645 650 655  
 Phe Ala Ser Tyr Ala Phe Asn Lys Ser His Ala Thr Cys Tyr Ser Trp  
 660 665 670  
 Val Ala Tyr Gln Thr Ala Tyr Leu Lys Ala Asn Tyr Pro Ala Glu Tyr  
 675 680 685  
 Met Ala Ala Val Met Ser Arg Ser Leu Ser Asn Ile Thr Asp Ile Thr  
 690 695 700  
 Lys Leu Met Asp Glu Cys Lys Met Met Gly Val Gln Thr Leu Gly Pro  
 705 710 715 720  
 Asp Val Asn Glu Ser Asn Leu Lys Phe Thr Val Asn Arg Asn Gly Asn  
 725 730 735  
 Ile Arg Phe Gly Leu Gly Ala Val Lys Gly Val Gly Glu Ala Ala Val  
 740 745 750  
 Gln Ser Ile Met Glu Glu Arg Lys Glu Asn Gly Pro Phe Lys Gly Ile  
 755 760 765  
 Phe Asp Phe Val Gln Arg Val Asn Leu Asn Ala Cys Asn Lys Lys Asn  
 770 775 780  
 Met Glu Cys Leu Ala Leu Ala Gly Gly Phe Asp Ser Phe Pro Glu Leu  
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[illegible]

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			20					25					30		
Tyr	Ile	Val	Thr	Arg	Arg	Leu	Val	Phe	Ile	Ser	Gly	Gly	Ile	Thr	His
		35					40					45			
Ala	Ser	Phe	Gly	Gly	Ile	Gly	Leu	Gly	Leu	Tyr	Ala	Gly	Ile	Ser	Pro
	50					55					60				
Ile	Leu	Ser	Ala	Ala	Val	Phe	Ser	Val	Leu	Ser	Ala	Phe	Gly	Val	Glu
65					70					75				80	
Trp	Leu	Ser	Lys	Arg	Lys	Asp	Met	Arg	Glu	Asp	Ser	Ala	Ile	Ala	Met
				85					90					95	
Phe	Trp	Thr	Leu	Gly	Met	Ala	Leu	Gly	Ile	Met	Phe	Ser	Phe	Leu	Ser
			100					105					110		
Pro	Gly	Phe	Ala	Pro	Asp	Leu	Ser	Ala	Tyr	Leu	Phe	Gly	Asn	Ile	Leu
		115					120					125			
Thr	Ile	Thr	Gln	Thr	Asp	Leu	Leu	Leu	Leu	Gly	Ile	Leu	Ala	Ile	Leu
	130					135					140				
Leu	Ile	Leu	Phe	Phe	Thr	Leu	Phe	Ile	His	Pro	Ile	Ile	Tyr	Val	Ala

145 150 155 160  
 Phe Asp Arg Glu Phe Ala Arg Ser Gln Gly Ile Pro Val Val Val Leu  
 165 170 175  
 Glu Tyr Ile Leu Met Met Phe Ile Ala Leu Thr Ile Val Ser Cys Leu  
 180 185 190  
 Arg Met Val Gly Ile Val Leu Ala Ile Ser Leu Leu Thr Ile Pro Gln  
 195 200 205  
 Met Thr Ala Asn Leu Phe Thr Asn Lys Phe Lys Arg Ile Ile Trp Leu  
 210 215 220  
 Ser Ile Ala Ile Gly Tyr Leu Ser Cys Leu Gly Gly Leu Leu Ile Ser  
 225 230 235 240  
 Tyr Arg Leu Asn Val Pro Ser Gly Ala Ser Ile Ile Phe Phe Ser Ile  
 245 250 255  
 Leu Ile Tyr Ile Ala Cys Lys Ile Gly Lys Ser Leu Phe Arg Lys Lys  
 260 265 270  
 Gln

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 Arg Met Cys Ala Ser Ala Ser Ser Arg Tyr Ile Thr Ala Ile Ser Ile  
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 Phe Ser Cys Asp Ser Ser Ile Ile Val Phe Thr Ser Thr Ile Leu Leu  
 35 40 45  
 Ser Ile Tyr Lys Ile Gly Thr Leu Ile His Phe Glu Asn Lys Ser Arg  
 50 55 60  
 Leu Phe Phe Asp Tyr Leu Gln Leu Ser Ile Glu Arg Asn Ala Leu Pro  
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<400> 8442  
 Gly Val Arg Arg Met Leu Asp Asp Ser Tyr Phe Met Lys Gln Ala Leu  
 1 5 10 15  
 Ile Glu Ala Val Lys Ala Gly Glu Arg Gly Glu Val Pro Val Gly Ala  
 20 25 30  
 Val Val Val Cys Lys Glu Arg Ile Ile Ala Arg Ala His Asn Leu Thr  
 35 40 45  
 Glu Thr Leu Asn Asp Val Thr Ala His Ala Glu Met Gln Ala Ile Thr  
 50 55 60  
 Ala Ala Ala Asn Val Leu Gly Gly Lys Tyr Leu Asn Glu Cys Thr Leu  
 65 70 75 80  
 Tyr Val Thr Val Glu Pro Cys Val Met Cys Ala Gly Ala Ile Ala Trp  
 85 90 95  
 Ala Gln Thr Gly Lys Leu Val Phe Gly Ala Glu Asp Asp Lys Arg Gly  
 100 105 110  
 Tyr Gln Arg Tyr Ala Pro Gln Ala Leu His Pro Lys Thr Val Val Val  
 115 120 125

Lys Gly Ile Leu Ala Asp Glu Cys Ala Gly Leu Met Lys Asp Phe Phe  
 130 135 140  
 Ala Ala Lys Arg Arg  
 145

<210> 8443  
 <211> 430  
 <212> PRT  
 <213> B.fragilis

<400> 8443

Arg Ala Gly Ser Ser Ala Asn Ser Asn Gln Glu Gly Arg Gly Cys Met  
 1 5 10 15  
 Arg Ser Ser Arg Trp Phe Ile Ile Gly Ile Val Leu Phe Leu Ile  
 20 25 30  
 Met Phe Val Val Glu Ser His Leu Pro Lys Lys Phe Val Trp Asn Pro  
 35 40 45  
 Thr Phe Ala Gln His Asp His Gln Pro Leu Gly Cys Ala Val Phe Asp  
 50 55 60  
 Asp Val Leu Lys Ser Ser Leu Pro Asp Gly Tyr Ser Leu Ser Arg Lys  
 65 70 75 80  
 Thr Phe Tyr Gln Phe Ala Ala Asp Ser Asp Ser Cys Gln Ser Ile Leu  
 85 90 95  
 Val Ile Thr Gln His Val Asn Leu Val Glu Ala Asp Leu Asn Ala Leu  
 100 105 110  
 Leu Asp Leu Ala Gln Arg Gly Asn Lys Ile Leu Ile Ala Ala Ser Ser  
 115 120 125  
 Phe Ser Thr Ser Leu Ser Asp Thr Leu Gly Phe Asp Asn Ser Tyr Ala  
 130 135 140  
 Tyr Phe Asn Pro Arg Arg Met Lys Glu Tyr Ala Gly Asn Leu Leu Glu  
 145 150 155 160  
 Arg Asp Ser Val Cys Trp Ile Gly Asp Ser Ala Val Tyr Asp Lys Arg  
 165 170 175  
 Thr Phe Arg Phe Tyr Pro His Leu Cys Gly Ile Tyr Phe Thr Lys Tyr  
 180 185 190  
 Asp Ser Leu Ser Leu Pro Leu Ala Thr Lys Arg Ile Asp Ser Met Gln  
 195 200 205  
 Met Phe Asn Asp Ser Leu Pro Asp Cys Phe Pro Pro Val Ala Leu Ser  
 210 215 220  
 Arg Pro Val Gly Ser Gly Glu Ile Val Leu Val Thr Thr Pro Leu Leu  
 225 230 235 240  
 Phe Thr Asn Tyr Gly Met Leu Asp Gly Asp Asn Ala Ala Tyr Leu Phe  
 245 250 255  
 Arg Leu Leu Ser His Leu Lys Gly Leu Pro Val Val Arg Thr Glu Ala  
 260 265 270  
 Tyr Gly Ala Gly Ala Gln Val Glu Val Ser Pro Phe Arg Tyr Phe Leu  
 275 280 285  
 Ser Gln Arg Pro Leu Arg Trp Ala Leu Tyr Leu Thr Met Leu Val Leu  
 290 295 300  
 Val Leu Phe Met Val Phe Thr Ala Arg Arg Arg Gln Arg Ala Ile Pro  
 305 310 315 320  
 Val Ile Arg Glu Pro Ala Asn Arg Asn Leu Glu Phe Ala Glu Leu Ile  
 325 330 335  
 Gly Thr Leu Tyr Tyr Gln Lys Lys Asn His Ala Asp Leu Val Arg Lys  
 340 345 350  
 Lys Phe Ile Tyr Phe Asp Glu Ser Leu Arg Arg Asn Ile Gln Val Asp  
 355 360 365  
 Val Glu Asp Asp Ser Asp Asp Asn Ala Leu Ser Arg Arg Ile Ser Arg  
 370 375 380

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Lys Thr Gly Thr Asp Glu Glu Lys Val Arg Asn Leu Phe Arg Lys Leu  
 385 390 395 400  
 Arg Pro Val Ile Arg Gly Gln Gln Glu Val Gly Glu Thr Leu Met Lys  
 405 410 415  
 Asp Leu Ile Asp Gly Met Asn Glu Ile Glu Lys Pro Gln Pro  
 420 425 430

<210> 8444  
 <211> 88  
 <212> PRT  
 <213> B.fragilis

<400> 8444  
 Asn Tyr Arg Ser Lys Ser Lys Phe Ala Lys Asn Met Arg Lys Arg Asp  
 1 5 10 15  
 Lys Lys Cys Asn Lys Ala Thr Pro Asp Glu Pro Lys Arg Glu Arg Arg  
 20 25 30  
 Met Ser Ile Leu Leu Ser Glu Asp Glu Gln Gln Ile Val Asp Arg Tyr  
 35 40 45  
 Leu Asp Lys Tyr Lys Ile Thr Asn Lys Ser Arg Trp Leu Arg Glu Thr  
 50 55 60  
 Ile Leu Met Phe Ile His Lys Asn Met Glu Glu Asp Tyr Pro Thr Leu  
 65 70 75 80  
 Phe Gly Glu His Asp Met Arg Arg  
 85

<210> 8445  
 <211> 84  
 <212> PRT  
 <213> B.fragilis

<400> 8445  
 Leu Gly Thr Arg Leu His Ala Val Glu Glu Leu Ala Ala Val Gln Glu  
 1 5 10 15  
 Ser Leu Gln Val Met Phe Thr Val Lys Val Ala Pro Ser Leu Leu Met  
 20 25 30  
 Phe Ser Lys Val Asp Trp Asp Asn Ser Ser Val Ala Ser Glu Val Glu  
 35 40 45  
 Ser Ser Gln Leu Leu Lys Pro Ile Ser Thr Lys Ser Ile Thr Asn Lys  
 50 55 60  
 Tyr Ser Val Phe Ile Lys Glu Cys Phe Phe Ile Lys Asn Thr Gly Ser  
 65 70 75 80  
 Lys Ile Met Val

<210> 8446  
 <211> 65  
 <212> PRT  
 <213> B.fragilis

<400> 8446  
 Arg Arg Gln Gly Asn Ser Pro Ala Asn Arg Tyr Ile Gly Lys Ala Leu  
 1 5 10 15  
 Leu Asn Glu Ser Glu Phe Thr Arg Asn Tyr Leu Thr His Arg Glu Leu  
 20 25 30  
 Thr Ser Gly Gly Glu Leu Val Leu Trp Met Asp Ser Val Pro Asp Ser  
 35 40 45  
 Arg Arg Gly Thr Gln Lys Glu Asp Leu Pro Tyr Ser Tyr Ser Asn Gly  
 50 55 60



His  
65

<210> 8447  
<211> 92  
<212> PRT  
<213> B.fragilis

<400> 8447  
Gly Thr Gly Gly Arg Asn Lys Lys Asn Ser Asp Gln Arg Leu Ile Ile  
1 5 10 15  
Arg Arg Met Ala Pro Gln Tyr Phe Val Gln Gly Ile Phe Ala Thr Ala  
20 25 30  
Gly Leu Ile Ala Leu Leu Ala Ser Ile Leu Asn Trp Asn Trp Phe Phe  
35 40 45  
Thr Ala Gln Asn Ala Gln Leu Ile Val Arg Asn Val Gly Arg Gly Arg  
50 55 60  
Ala Arg Leu Phe Tyr Gly Leu Leu Gly Val Ile Met Ile Gly Met Ala  
65 70 75 80  
Val Phe Phe Phe Leu Asn Thr Gln Pro Val Ser Glu  
85 90

<210> 8448  
<211> 311  
<212> PRT  
<213> B.fragilis

<400> 8448  
Asn Met Lys Gly Leu Val Ile Lys Asn Thr Gly Ser Trp Tyr Gln Val  
1 5 10 15  
Lys Thr Asp Asp Gly Gln Leu Val Glu Cys Lys Ile Lys Gly Asn Phe  
20 25 30  
Arg Leu Lys Gly Ile Arg Ser Thr Asn Pro Val Ala Val Gly Asp Arg  
35 40 45  
Val Gln Ile Ile Leu Asn Gln Glu Gly Thr Ala Phe Ile Ser Glu Ile  
50 55 60  
Glu Asp Arg Lys Asn Tyr Ile Ile Arg Arg Ser Ser Asn Leu Ser Lys  
65 70 75 80  
Gln Ser His Ile Leu Ala Ala Asn Leu Asp Gln Cys Met Leu Val Val  
85 90 95  
Thr Val Asn Tyr Pro Glu Thr Ser Thr Thr Phe Ile Asp Arg Phe Leu  
100 105 110  
Ala Ser Ala Glu Ala Tyr Arg Val Pro Val Lys Ile Leu Phe Asn Lys  
115 120 125  
Val Asp Ala Tyr Asp Glu Asp Glu Leu His Tyr Leu Asp Ser Leu Ile  
130 135 140  
Thr Leu Tyr Thr Gln Ile Gly Tyr Pro Cys Phe Lys Ile Ser Ala Leu  
145 150 155 160  
Thr Gly Glu Gly Val Asp Ala Ile Arg Glu Glu Leu Lys Gly Arg Val  
165 170 175  
Thr Leu Phe Ser Gly His Ser Gly Val Gly Lys Ser Thr Leu Ile Asn  
180 185 190  
Ala Leu Val Pro Gly Leu Glu Val Lys Thr Ala Glu Ile Ser Ala Tyr  
195 200 205  
His Asn Lys Gly Met His Thr Thr Thr Phe Ser Glu Met Phe Pro Val  
210 215 220  
Pro Gly Asp Gly Tyr Ile Ile Asp Thr Pro Gly Ile Lys Gly Phe Gly  
225 230 235 240  
Thr Phe Asp Met Glu Glu Glu Glu Ile Gly His Tyr Phe Pro Glu Ile

				245						250						255			
Phe	Lys	Thr	Ser	Ala	Asn	Cys	Lys	Tyr	Gly	Asn	Cys	Thr	His	Arg	Gln				
			260					265					270						
Glu	Pro	Gly	Cys	Ala	Val	Arg	Lys	Ala	Val	Glu	Glu	His	Tyr	Ile	Ser				
		275					280					285							
Glu	Ser	Arg	Tyr	Thr	Ser	Tyr	Leu	Ser	Met	Leu	Glu	Asp	Lys	Glu	Glu				
	290					295				300									
Gly	Lys	Tyr	Arg	Ala	Ala	Tyr													
305					310														

&lt;210&gt; 8449

&lt;211&gt; 1065

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8449

Phe	Ile	Ile	Ile	Met	Arg	Glu	Arg	Lys	Leu	Val	Glu	Arg	Ala	Val	Arg				
1				5					10					15					
Ile	Ser	Gly	Met	Phe	Val	Leu	Leu	Ser	Gly	Met	Gly	Leu	Gln	Pro	Cys				
		20						25					30						
Leu	Ala	Ser	His	Ser	Tyr	Asn	Ala	Pro	Ala	Gly	Val	Val	Gln	Val					
		35				40					45								
Glu	Gln	Gln	Lys	Gln	Lys	Ile	Thr	Gly	Cys	Val	Leu	Asp	Val	Thr	Gly				
	50				55						60								
Ser	Pro	Leu	Pro	Gly	Ala	Ser	Val	Leu	Val	Lys	Gly	Ala	Pro	Gly	Arg				
65				70					75					80					
Gly	Ala	Ile	Thr	Asp	Met	Asp	Gly	Asn	Phe	Ser	Val	Glu	Ala	Glu	Gln				
				85				90						95					
Gly	Glu	Gln	Leu	Glu	Ile	Ser	Phe	Ile	Gly	Met	Glu	Thr	Gln	Val	Val				
			100				105						110						
Thr	Val	Ser	Ala	Lys	Thr	Arg	Leu	Gln	Ile	Thr	Leu	Lys	Glu	Asp	Ser				
		115				120						125							
Lys	Thr	Leu	Asp	Glu	Val	Val	Val	Gly	Tyr	Gly	Thr	Gln	Lys	Lys					
	130				135					140									
Ala	Asn	Leu	Thr	Gly	Ala	Val	Ala	Ser	Val	Ser	Ala	Glu	Thr	Leu	Glu				
145				150					155					160					
Ser	Arg	Pro	Ile	Thr	Asn	Leu	Ser	Gln	Gly	Leu	Gln	Pro	Pro	Ile	Gly				
			165					170						175					
Asn	Leu	Asn	Ile	Ser	Ala	Asp	Asn	Gly	Ala	Pro	Gly	Lys	Gly	Tyr	Gly				
		180						185					190						
Phe	Asn	Val	Arg	Gly	Thr	Thr	Ser	Ile	Asn	Ser	Ser	Gly	Pro	Leu	Val				
		195				200						205							
Leu	Val	Asp	Gly	Val	Gln	Met	Asp	Pro	Asn	Met	Ile	Asn	Pro	Ala	Asp				
	210				215					220									
Val	Glu	Ser	Val	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ala	Ser	Ile	Tyr				
225				230					235					240					
Gly	Thr	Gln	Ala	Ala	Tyr	Gly	Val	Val	Leu	Ile	Thr	Thr	Lys	Lys	Gly				
			245					250					255						
Lys	Asp	Glu	Lys	Ala	Lys	Ile	Ser	Phe	Ser	Ser	Asn	Trp	Ser	Ile	Asn				
		260					265						270						
Ser	Pro	Thr	Arg	Lys	Pro	Glu	Tyr	Met	Asp	Ser	Trp	Thr	Phe	Ala	Asn				
	275					280						285							
Phe	His	Asn	Leu	Thr	Asn	Arg	Asn	Ser	Gly	Gly	Gly	Asp	Tyr	Tyr	Asp				
	290				295						300								
Lys	Asn	Tyr	Met	Asp	His	Ile	Tyr	Ala	Tyr	Tyr	Thr	Asp	Pro	Lys	His				
305				310					315						320				
Asn	Leu	Pro	Val	Phe	Ile	Asp	Pro	Ser	Asn	Pro	Asn	Lys	Tyr	Leu	Tyr				
			325					330					335						
Cys	Gly	Asn	Thr	Asp	Trp	Ile	Asp	Glu	Thr	Ile	Lys	Asp	Asn	Thr	Leu				

Met	Gln	Gln	Tyr	Thr	Leu	Ser	Leu	Asn	Gly	Gly	Ser	Gly	Lys	Thr	Ala
		355						360					365		
Tyr	Tyr	Gly	Ser	Ile	Gly	Phe	Leu	Asp	Gln	Gly	Gly	Thr	Leu	Lys	His
	370					375					380				
Tyr	Asp	Asp	Lys	Tyr	Arg	Arg	Phe	Asn	Val	Asn	Leu	Asn	Leu	Thr	Ser
385					390					395					400
Asp	Val	Thr	Asn	Trp	Leu	Gln	Val	Arg	Leu	Lys	Thr	Val	Tyr	Asn	Asn
			405						410						415
Thr	Tyr	Arg	Asp	Ala	Pro	Tyr	Gly	Ser	Asn	Asn	Ser	Asp	Glu	Thr	Ala
			420					425					430		
Gln	Ile	Asn	Ser	Ala	Phe	Tyr	Gly	Ala	Asp	Leu	Arg	Pro	Met	Met	Pro
		435					440					445			
Val	Tyr	His	Pro	Asp	Gly	Asn	Phe	Ser	Gly	Gln	Gly	Ser	Trp	Thr	Asn
	450					455					460				
Met	Val	Ala	Thr	Gln	Ser	Ile	Ser	Gly	Glu	Arg	Lys	Asn	Lys	Glu	Asn
465					470					475					480
Asp	Leu	Trp	Leu	Thr	Gly	Gly	Leu	Lys	Ile	Thr	Pro	Leu	Lys	Asp	Trp
				485					490						495
Thr	Ile	Asn	Val	Asp	Tyr	Thr	Tyr	Asn	Met	Tyr	Ile	Leu	Ser	Lys	Lys
		500						505					510		
Gln	His	Gly	Lys	Glu	Ile	Leu	Glu	His	Thr	Ala	Asn	Pro	Asp	Ile	Val
	515						520					525			
Thr	Val	Phe	Pro	His	Thr	Thr	Pro	Ser	Arg	Val	Lys	Phe	Thr	Thr	Asp
	530					535					540				
Asp	Asn	Tyr	Tyr	Gln	Thr	Phe	Asn	Ala	Tyr	Thr	Asp	Tyr	Ser	Lys	Ser
545					550					555					560
Leu	Gly	Lys	His	Asn	Ile	Lys	Leu	Leu	Leu	Gly	Tyr	Asn	Tyr	Glu	Thr
				565					570						575
Lys	Ser	Tyr	Arg	Trp	Phe	Asn	Ala	Glu	Arg	Glu	Asn	Leu	Ile	Ser	Asn
			580					585					590		
Asp	Leu	Ala	Gly	Leu	Gly	Gln	Ala	Tyr	Gly	Glu	Lys	Tyr	Asn	Gly	Ser
		595					600					605			
Gly	Gln	His	Ser	Trp	Ala	Thr	Met	Gly	Tyr	Phe	Ala	Arg	Ile	Asn	Tyr
	610					615					620				
Asn	Tyr	Asp	Glu	Arg	Tyr	Leu	Leu	Glu	Leu	Asn	Gly	Arg	Tyr	Asp	Gly
625					630					635					640
Ser	Ser	Lys	Phe	Pro	Lys	Asp	Lys	Arg	Phe	Val	Phe	Phe	Pro	Ser	Val
				645					650					655	
Ser	Ala	Ala	Trp	Arg	Ile	Ser	Ser	Glu	Ala	Phe	Phe	Glu	Pro	Ala	Lys
			660					665					670		
Lys	Ile	Val	Asp	Glu	Leu	Lys	Ile	Arg	Ala	Ser	Tyr	Gly	Ser	Leu	Gly
		675					680					685			
Asn	Gln	Ser	Val	Gly	Gly	Asp	Tyr	Pro	Tyr	Ile	Ala	Thr	Met	Gly	Thr
	690					695					700				
Asn	Gly	Glu	Met	Gly	Tyr	Leu	Val	Asp	Gly	Lys	Lys	Ile	Ala	Ser	Val
705					710					715					720
Ser	Pro	Gly	Gly	Ile	Val	Ser	Pro	Tyr	Leu	Thr	Trp	Glu	Thr	Val	Arg
				725					730						735
Gln	Ile	Asp	Leu	Gly	Leu	Asp	Trp	Ala	Leu	Leu	Asn	Ser	Arg	Leu	Tyr
		740						745					750		
Gly	Thr	Phe	Asp	Trp	Tyr	Met	Arg	Lys	Thr	Leu	Asp	Met	Val	Thr	Asn
		755					760					765			
Gly	Thr	Pro	Leu	Pro	Ala	Val	Leu	Gly	Thr	Gly	Ala	Pro	Gln	Ala	Asn
	770					775					780				
Thr	Ala	Asp	Leu	Lys	Thr	Thr	Gly	Trp	Glu	Leu	Ser	Met	Gly	Trp	Arg
785					790					795					800
Asp	Arg	Val	Asn	Lys	Asp	Phe	Ser	Tyr	Asp	Val	Ser	Phe	Val	Leu	Ser
			805						810						815

Asp Tyr Gln Ala Glu Ile Thr Lys Phe Asn Asn Pro Gln Asn Leu Leu  
 820 825 830  
 Ser Thr His Tyr Val Gly Lys Lys Trp Gly Glu Ile Trp Gly Leu Val  
 835 840 845  
 Thr Glu Gly Leu Phe Gln Ser Ala Glu Glu Val Ser Ala His Ala Asp  
 850 855 860  
 Gln Ser Glu Ile Tyr Gly Gly Gly Trp Tyr Pro Gly Asp Val Lys Tyr  
 865 870 875 880  
 Lys Asp Leu Asn Gly Asp Gly Lys Ile Asn Lys Gly Lys Asn Thr Leu  
 885 890 895  
 Asp Asp Pro Gly Asp Gln Lys Ile Ile Gly Asn Ser Glu Pro Arg Tyr  
 900 905 910  
 Ser Tyr Gly Ile Lys Gly Gly Leu Gln Trp Arg Asp Phe Asp Phe Asp  
 915 920 925  
 Val Phe Phe Gln Gly Ile Gly Lys Lys Asp Val Val Leu Gly Gly Asn  
 930 935 940  
 Gln Phe Trp Gly Phe Gly Asn Glu Trp His Val Pro Phe Lys His Ala  
 945 950 955 960  
 Leu Asp Ser Trp Thr Glu Asp Asn Arg Asn Ala Tyr Phe Pro Arg Ser  
 965 970 975  
 Thr Tyr Asp Asn Val Thr Gly Asn Arg Glu Thr Gln Thr Arg Tyr Leu  
 980 985 990  
 Gln Asn Ala Tyr Leu Arg Leu Lys Ser Ile Thr Leu Gly Tyr Ser  
 995 1000 1005  
 Leu Pro Lys Ala Leu Leu Ala Lys Trp Lys Ile Asp His Val Arg Phe  
 1010 1015 1020  
 Tyr Val Ser Gly Gln Asn Leu Leu Thr Phe Asp His Leu Phe Asp Ile  
 1025 1030 1035 1040  
 Tyr Asp Pro Glu Thr Val Ser Leu Ser Thr Tyr Pro Leu Thr Lys Ser  
 1045 1050 1055  
 Val Ser Phe Gly Leu Asn Ile Thr Leu  
 1060 1065

&lt;210&gt; 8450

&lt;211&gt; 143

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8450

Phe Val Ile Met Trp Ile Leu Ile Val Gly Leu Val Leu Leu Ala Ile  
 1 5 10 15  
 Val Ala Met Ile Ala Gly Tyr Ile Arg Asn Lys Arg Leu Gln Lys Lys  
 20 25 30  
 Ile Asp Asn Gly Glu Leu Asp Ser Phe Pro Glu Val Lys Glu Val Asp  
 35 40 45  
 Val Glu Cys Cys Gly Gln His Glu Val Cys Glu Arg Asp Ser Leu Leu  
 50 55 60  
 Ala Ala Val Ser Lys Gln Ile Glu Tyr Tyr Asp Asp Glu Glu Leu Asp  
 65 70 75 80  
 Thr Phe Ile Gly Arg Ala Pro Glu Asp Tyr Thr Pro Glu Glu Ala Asp  
 85 90 95  
 Lys Phe Arg Asp Val Phe Tyr Thr Met Gln Asp Thr Asp Val Ala Gly  
 100 105 110  
 Trp Val Arg Ser Leu Gln Leu Arg Gly Ile Ser Leu Pro Asp Glu Ile  
 115 120 125  
 Lys Asp Glu Val Phe Leu Val Val Gly Glu Arg Arg Ile His Pro  
 130 135 140

&lt;210&gt; 8451

<211> 73  
 <212> PRT  
 <213> B.fragilis

<400> 8451

Trp	Ala	Asp	Tyr	Arg	Trp	Tyr	Val	Phe	Ser	Ala	Met	Gly	Phe	Tyr	Pro
1				5					10					15	
Val	Cys	Pro	Gly	Val	Pro	Glu	Tyr	Ala	Met	Gly	Ser	Pro	Leu	Phe	Pro
			20					25					30		
Lys	Leu	Thr	Leu	His	Leu	Pro	Gly	Arg	Lys	Glu	Leu	His	Cys	Glu	Gly
		35					40					45			
Gly	Lys	Ala	Ile	Ala	Arg	Arg	Thr	Gly	Ile	Ser	Gly	Lys	Pro	Cys	Ser
	50					55					60				
Met	Lys	Val	Asn	Leu	Pro	Val	Thr	Thr							
65						70									

<210> 8452  
 <211> 66  
 <212> PRT  
 <213> B.fragilis

<400> 8452

Leu	Ile	Ala	Ile	Ser	Glu	Ile	Ser	Ile	Thr	His	Ser	Arg	Thr	Met	Ala
1				5					10					15	
Gly	Asn	Asn	Gln	Asn	Lys	Lys	Ala	Ala	Met	Lys	Lys	Tyr	Leu	Leu	Thr
			20					25					30		
Ile	Tyr	Lys	Leu	Leu	Leu	Lys	Tyr	Leu	Leu	Met	Leu	Ile	Cys	Ile	Val
		35					40					45			
Lys	Trp	Asp	Ser	Leu	Leu	Ile	Ser	Ile	Ile	Cys	Leu	Cys	Leu	Pro	Phe
	50					55					60				
Phe	Cys														
65															

<210> 8453  
 <211> 240  
 <212> PRT  
 <213> B.fragilis

<400> 8453

Arg	Thr	Asp	Met	Val	Val	Thr	Lys	Ile	Lys	Ile	Ser	Ala	Met	Ile	Leu
1				5					10					15	
Thr	Cys	Met	Leu	Tyr	Asn	Ala	Leu	Asn	Thr	Cys	Ala	Arg	Ser	Val	Asp
			20					25					30		
Ile	Ser	His	Lys	Gly	Cys	Lys	Tyr	Ser	Ile	Asp	Leu	Pro	Ser	Gly	Trp
		35					40					45			
Asp	Thr	Ile	Pro	His	Asp	Thr	Leu	Lys	Lys	Ile	Phe	Pro	Arg	Leu	Asp
	50					55					60				
Leu	Asp	Met	Gly	Leu	Tyr	Pro	Val	Ser	Gln	Lys	Glu	Tyr	Phe	Thr	Gly
65					70					75				80	
Asn	Tyr	Ala	Leu	Val	Gly	Phe	Met	Pro	Val	Leu	Gln	Ser	Leu	His	Ser
			85						90					95	
Tyr	Ser	Phe	Asp	Arg	Ile	Val	Ser	Asp	Met	Lys	Glu	Met	Asn	Asp	Arg
			100					105					110		
Thr	Lys	Asn	Thr	Trp	Asn	Asn	Asp	Ser	Ile	Ser	Thr	Arg	Leu	Asp	Ser
		115					120					125			
Ile	Val	Pro	Val	Asn	Ser	Ser	Pro	Asn	Tyr	Arg	Ile	Asn	Asn	Tyr	Leu
	130					135					140				
Thr	Ile	Arg	Arg	Asp	Ser	Ile	Leu	Leu	Lys	Gly	Cys	Gln	Ser	Leu	Tyr
145					150					155					160

Val Ser Lys Phe Gly Tyr Ile Thr Leu Met Leu Tyr Gln Lys Gly Asn  
 165 170 175  
 Asp Ala Leu Pro Ile Asp Ser Leu Leu Gly Lys Phe Asn Asp Ser Gly  
 180 185 190  
 Cys Leu Lys Val Asp Gln Glu Tyr Arg Tyr Thr Pro Pro Gln Lys Glu  
 195 200 205  
 Gly Leu Ser Phe Thr His Phe Leu Tyr Ala Leu Gly Ile Gly Gly Ile  
 210 215 220  
 Val Tyr Leu Leu Ile Ala Phe Phe Pro Lys Arg Lys Thr Asn Arg Gln  
 225 230 235 240

<210> 8454  
 <211> 451  
 <212> PRT  
 <213> B.fragilis

<400> 8454

Thr Ile Ile Phe Asp Pro Val Phe Phe Ile Lys Lys His Ser Phe Met  
 1 5 10 15  
 Lys Thr Glu Tyr Leu Phe Val Ile Leu Leu Val Leu Ile Gly Phe Ser  
 20 25 30  
 Ser Cys Glu Asp Ser Thr Ser Asp Ala Thr Leu Glu Leu Ser Gln Ser  
 35 40 45  
 Thr Phe Glu Asn Ile Ser Ser Asp Gly Ala Thr Leu Thr Val Asn Ile  
 50 55 60  
 Thr Cys Ser Asp Ser Trp Thr Ala Ala Ser Ser Thr Ala Cys Asn  
 65 70 75 80  
 Leu Val Pro Asn Gln Gly Thr Ser Asn Gln Ser Leu Ser Ile Val Val  
 85 90 95  
 Glu Ala Asn Leu Asp Glu Ala Glu Arg Asn Met Thr Val Val Val Thr  
 100 105 110  
 Ser Gly Gly Ile Lys Lys Thr Ile Ser Ile Ser Gln Gln Gly Arg Ser  
 115 120 125  
 Thr Thr Ala Gly Glu Tyr His Tyr Asn Leu Pro Val Ile Phe His Val  
 130 135 140  
 Leu Tyr Lys Asp Lys Asn Asn Pro Leu Gln Tyr Val Lys Gln Asp Arg  
 145 150 155 160  
 Leu Ala Lys Ile Leu Asp Thr Val Asn Lys Leu Tyr Lys Asp Lys Thr  
 165 170 175  
 Lys Ser Val Asp Met Asn Leu Thr Phe Thr Leu Ala Thr Thr Asp Glu  
 180 185 190  
 Asp Gly Lys Pro Leu Ser Thr Pro Gly Val Lys Tyr Val Leu Trp Glu  
 195 200 205  
 Glu Ser Tyr Pro Ile Asp Cys Asp Val Phe Met Asn Asp Glu Thr Gly  
 210 215 220  
 Lys Tyr Val Lys Tyr Ile Trp Glu Pro Asn Asn Tyr Ile Asn Val Met  
 225 230 235 240  
 Val Tyr Asn Phe Lys Asp Asp Glu Ser Thr Asn Ser Thr Thr Leu Gly  
 245 250 255  
 Ile Ala His Ile Pro Phe Ser Thr Val Gly Ser Asn Tyr Leu Glu Gly  
 260 265 270  
 Leu Ser Lys Thr Gln Lys Ser Tyr Leu Glu Lys Gln Asn Leu Lys Phe  
 275 280 285  
 Pro Tyr Ser Val Ser Ile Asn Ser Leu Phe Ile Asn Asp Gln Ser Thr  
 290 295 300  
 Ser Thr Gln Tyr Ser Thr Ala Asp Ile Thr Val Thr Leu Ala His Glu  
 305 310 315 320  
 Leu Gly His Tyr Leu Gly Leu His His Ala Phe Ser Glu Asn Asp Glu  
 325 330 335

4604 8454 451 PRT B.fragilis

Gly Ile Tyr Asp Gly Cys Phe Asp Ser Asp Tyr Cys Asp Asp Thr Pro  
 340 345 350  
 Thr Tyr Asn Lys Val Glu Tyr Asp Ala Asp Tyr Ala Tyr Thr Ala Lys  
 355 360 365  
 Asn Asp Pro Ala Asn Phe Thr Phe Asp Tyr Leu Val Lys Arg Glu Asn  
 370 375 380  
 Cys Lys Thr Asn Gln Thr Phe Thr Ser Thr Asn Ile Met Asp Tyr Ser  
 385 390 395 400  
 Val Ser Tyr Ser Asp Arg Phe Thr Asn Asp Gln Arg Ser Arg Ile Arg  
 405 410 415  
 His Val Leu Thr Tyr Ser Pro Leu Ile Pro Gly Pro Lys Gln Gly Gln  
 420 425 430  
 Thr Gln Thr Arg Ser Val Val Glu Gly Pro Ile Asp Leu Pro Ile Arg  
 435 440 445  
 Thr Ala Arg  
 450

<210> 8455

<211> 339

<212> PRT

<213> B.fragilis

<400> 8455

Asn Arg Asn Ile Pro Ile Met Lys Arg Lys His Leu Ile Thr Val Leu  
 1 5 10 15  
 Met Trp Cys Val Ala Thr Thr Leu Cys Ala Gln Thr Pro Val Glu Lys  
 20 25 30  
 Gly Leu Lys Ser Ile Asn Arg Gln Ala Thr Glu Ala Tyr Ile Gly Phe  
 35 40 45  
 Leu Ala Asp Asp Glu Leu Gln Gly Arg Glu Ala Gly Phe His Gly Ser  
 50 55 60  
 Arg Val Ala Ala Arg Tyr Ile Ala Ser Leu Leu Lys Glu Met Gly Ile  
 65 70 75 80  
 Arg Pro Leu Gly Glu Ser Tyr Tyr Gln Pro Phe Asp Ala Tyr Arg Lys  
 85 90 95  
 Glu Arg Gln Gln Lys Gly Arg Leu Glu Val His Pro Asp Ser Ile Ala  
 100 105 110  
 Lys Leu Lys Gln Val Val His Gln Lys Leu Ser Met Asn Asn Val Leu  
 115 120 125  
 Gly Met Ile Pro Gly Lys Lys Thr Asn Glu Tyr Val Ile Val Gly Ala  
 130 135 140  
 His Phe Asp His Leu Gly Ile Asp Pro Ala Leu Asp Gly Asp Gln Ile  
 145 150 155 160  
 Tyr Asn Gly Ala Asp Asp Asn Ala Ser Gly Val Ser Ala Val Leu Gln  
 165 170 175  
 Ile Ala Lys Ala Phe Val Val Ser Gly Gln Gln Pro Glu Arg Asn Val  
 180 185 190  
 Ile Phe Ala Phe Trp Asp Gly Glu Glu Lys Gly Leu Leu Gly Ser Lys  
 195 200 205  
 Tyr Phe Val Gln Glu Cys Pro Phe Ile Asn Gln Val Lys Gly Tyr Leu  
 210 215 220  
 Asn Phe Asp Met Ile Gly Arg Asn Asn Gln Pro Gln Asn Pro Lys His  
 225 230 235 240  
 Val Val Tyr Phe Tyr Thr Glu Ala Asn Pro Ala Phe Gly Arg Trp Leu  
 245 250 255  
 Lys Glu Asp Ile Lys Lys Tyr Gly Leu Gln Leu Glu Pro Asn Tyr Arg  
 260 265 270  
 Pro Trp Asp Lys Pro Val Gly Val Ser Asp Asn Gly Ser Phe Ala Lys  
 275 280 285

Ala Gly Ile Pro Ile Ile Trp Tyr His Thr Asp Gly His Pro Asp Tyr  
 290 295 300  
 His Gln Pro Ser Asp His Ala Asp Arg Leu Asn Trp Asp Lys Val Val  
 305 310 315 320  
 Glu Ile Ser Lys Ala Ser Phe Leu Asn Val Trp Asn Leu Ala Asn Glu  
 325 330 335  
 Lys Asp Tyr

<210> 8456  
 <211> 239  
 <212> PRT  
 <213> B.fragilis

<400> 8456  
 Glu Thr Ile Met Ala Asn Ala Ile Thr Arg His Ile Pro Asn Thr Val  
 1 5 10 15  
 Thr Cys Leu Asn Leu Phe Ser Gly Cys Ile Ala Gly Val Met Ala Phe  
 20 25 30  
 Glu Ala Lys Tyr Glu Leu Ala Phe Ile Phe Ile Ile Leu Ser Ala Val  
 35 40 45  
 Phe Asp Phe Phe Asp Gly Met Leu Ala Arg Leu Leu His Ala Tyr Ser  
 50 55 60  
 Pro Ile Gly Lys Glu Leu Asp Ser Leu Ala Asp Asp Val Ser Phe Gly  
 65 70 75 80  
 Val Ala Pro Ser Leu Leu Val Phe Ser Phe Leu Lys Glu Pro Gly Leu  
 85 90 95  
 Ile Tyr Pro Asp Phe Leu Ala Gly Leu Arg Asp Tyr Ile Pro Tyr Leu  
 100 105 110  
 Ala Phe Leu Ile Ser Ile Phe Ser Ala Leu Arg Leu Ala Asn Phe Asn  
 115 120 125  
 Val Asp Glu Arg Gln Thr Ser Ser Phe Ile Gly Leu Pro Val Pro Ala  
 130 135 140  
 Asn Ala Leu Tyr Trp Gly Ala Leu Ile Val Gly Gly Lys Asp Phe Leu  
 145 150 155 160  
 Leu Ala His Cys Asn Val Ile Tyr Leu Ile Ile Met Val Met Leu Phe  
 165 170 175  
 Ser Trp Leu Leu Val Ala Glu Ile Pro Met Phe Ser Leu Lys Phe Lys  
 180 185 190  
 Asn Leu Ser Trp Lys Asp Asn Lys Val Ser Phe Ile Phe Leu Ile Val  
 195 200 205  
 Cys Ile Pro Leu Leu Leu Phe Leu Gly Ile Ser Gly Phe Ser Ala Val  
 210 215 220  
 Ile Val Trp Tyr Ile Ile Leu Ser Leu Leu Thr Arg Lys Asn Lys  
 225 230 235

<210> 8457  
 <211> 231  
 <212> PRT  
 <213> B.fragilis

<400> 8457  
 Ile Ala Gln Met Gly Arg Leu Lys Lys Leu Lys Lys Ile Arg Ile His  
 1 5 10 15  
 Arg Glu Gly Thr His Ile Leu Trp Gly Ser Phe Phe Leu Leu Ile  
 20 25 30  
 Ile Asn Leu Ala Leu Tyr Trp Gly Ile Asp Cys Lys Ile Pro Phe Tyr  
 35 40 45  
 Leu Val Ala Leu Val Ser Ile Val Val Tyr Leu Leu Met Val Asn Phe



50 55 60  
 Phe Arg Cys Pro Ile Arg Leu Phe Gly Gln Asp Thr Glu Lys Ile Val  
 65 70 75 80  
 Val Ala Pro Ala Asp Gly Lys Ile Val Val Ile Glu Glu Val Asp Glu  
 85 90 95  
 His Glu Tyr Phe His Asp Arg Arg Ile Met Val Ser Ile Phe Met Ser  
 100 105 110  
 Ile Leu Asn Val His Ala Asn Trp Tyr Pro Val Asp Gly Val Val Lys  
 115 120 125  
 Lys Val Thr His Asp Asn Gly Lys Phe Met Lys Ala Trp Leu Pro Lys  
 130 135 140  
 Ala Ser Thr Glu Asn Glu Arg Ser Met Ile Val Ile Glu Thr Pro Glu  
 145 150 155 160  
 Gly Val Glu Val Met Ala Arg Gln Ile Ala Gly Ala Met Ala Arg Arg  
 165 170 175  
 Ile Val Thr Tyr Ala Glu Pro Gly Glu Glu Cys Tyr Ile Asp Glu His  
 180 185 190  
 Leu Gly Phe Ile Lys Phe Gly Ser Arg Val Asp Val Tyr Leu Pro Leu  
 195 200 205  
 Gly Thr Glu Ile Cys Val Ser Met Gly Gln Leu Thr Thr Gly Asn Gln  
 210 215 220  
 Thr Val Ile Ala Lys Leu Lys  
 225 230

<210> 8458

<211> 503

<212> PRT

<213> B.fragilis

<400> 8458

Thr Gly Arg Ile Gly Ser Val Thr Gly Val Ala Arg Asn His Asn Gly  
 1 5 10 15  
 Gly Val Pro Asp Asn Ser Ala Asn Tyr Phe Arg Ile Glu Phe Ser His  
 20 25 30  
 Pro Ile Ala Glu Glu Gly Val Tyr Asp Gly Asp Thr Leu Met Arg His  
 35 40 45  
 Arg Pro Thr Leu Glu Ser Asp Tyr Thr Cys Ala Tyr Leu Arg Phe Asn  
 50 55 60  
 Val Pro Ala Gly Glu Lys Leu Thr Val Arg Thr Ala Ser Ser Phe Ile  
 65 70 75 80  
 Ser Pro Ala Gln Ala Leu Val Asn Phe Ser Arg Glu Val Gly Gly Lys  
 85 90 95  
 Ser Leu Ala Gln Val Arg Glu Glu Ala Arg Lys Gln Trp Asn Ser Tyr  
 100 105 110  
 Leu Gly Arg Ile Glu Ala Glu Gly Gly Ser Glu Glu Gln Leu Arg Thr  
 115 120 125  
 Phe Tyr Ser Cys Leu Tyr Arg Thr Leu Leu Phe Pro Arg Glu Phe Tyr  
 130 135 140  
 Glu Phe Asp Ala Gln Gly Lys Pro Val Tyr Tyr Ser Pro Tyr Asn Gly  
 145 150 155 160  
 Lys Ile Gln Asp Gly Tyr Met Tyr Thr Asp Asn Gly Phe Trp Asp Thr  
 165 170 175  
 Phe Arg Ala Val His Pro Leu Phe Thr Leu Leu Tyr Pro Glu Val Ser  
 180 185 190  
 Glu Arg Val Thr Gln Ser Ile Leu Asn Ala Tyr Asp Glu Ser Gly Phe  
 195 200 205  
 Met Pro Glu Trp Ala Ser Pro Gly His Arg Glu Cys Met Ile Gly Asn  
 210 215 220  
 Asn Ser Ile Ser Leu Leu Thr Asp Ala Trp Met Lys Gly Ile Arg Thr

225 230 235 240  
 Ile Cys Pro Glu Lys Ala Leu Glu Ala Met Ile His Gln Thr Glu Gly  
 245 250 255  
 Arg His Pro Gly Ile Ser Ser Val Glu Arg Asp Gly Phe Gly Tyr Tyr  
 260 265 270  
 Asp Arg Leu Ser Tyr Val Pro Tyr Pro Glu Val His Glu Ala Thr Ala  
 275 280 285  
 Lys Thr Leu Glu Tyr Ala Tyr Ala Asp Trp Cys Val Ala Arg Phe Ala  
 290 295 300  
 Asp Ser Ile Gly Arg Lys Glu Ile Ala Asp Thr Tyr Tyr Arg Lys Ala  
 305 310 315 320  
 Leu Asn Tyr Arg Asn Leu Tyr Tyr Pro Asp Tyr Gly Phe Met Trp Ala  
 325 330 335  
 Lys Asp Ala Asn Gly Lys Trp Arg Asp Ala Phe Asp Ala Thr Glu Trp  
 340 345 350  
 Gly Gly Pro Phe Thr Glu Gly Ser Ser Trp His Trp Thr Trp Ser Val  
 355 360 365  
 Leu His Asp Pro Glu Gly Leu Ser Arg Leu Met Gly Gly His Thr Ala  
 370 375 380  
 Met Glu Ala Arg Leu Asp Ser Met Phe Thr Ala Pro Asn Thr Tyr Asn  
 385 390 395 400  
 Tyr Gly Thr Tyr Gly Phe Val Ile His Glu Ile Ala Glu Met Val Ala  
 405 410 415  
 Leu Asp Met Gly Gln Tyr Ala His Gly Asn Gln Pro Val Gln His Ala  
 420 425 430  
 Ile Tyr Leu Tyr Asp Tyr Ile Gly Arg Pro Trp Lys Thr Gln Lys His  
 435 440 445  
 Val Arg Glu Val Met Asp Lys Leu Tyr His Ser Gly Ser Lys Gly Tyr  
 450 455 460  
 Cys Gly Asp Glu Asp Asn Gly Gln Thr Thr Ala Gly Met Ser Phe Pro  
 465 470 475 480  
 Pro Trp Asp Ser Ile Arg Phe Val Pro Val Phe Arg Ser Met Pro Trp  
 485 490 495  
 Asp Leu Arg Ser Ser Arg Asn  
 500

<210> 8459  
 <211> 303  
 <212> PRT  
 <213> B.fragilis

<400> 8459

Lys Thr Arg Ile Ala Phe Arg Lys Val Gly Gln Glu Arg Thr Val Asp  
 1 5 10 15  
 Leu Val Leu Thr Ala Ile Leu Ala Asn Gly His Val Leu Ile Glu Gly  
 20 25 30  
 Val Pro Gly Val Ala Lys Thr Leu Leu Ala Arg Leu Thr Ala Arg Leu  
 35 40 45  
 Ile Asp Ala Asp Phe Ser Arg Val Gln Phe Thr Pro Asp Leu Met Pro  
 50 55 60  
 Ser Asp Val Leu Gly Thr Thr Val Phe Asn Met Lys Thr Asn Glu Phe  
 65 70 75 80  
 Asp Phe His Arg Gly Pro Val Phe Ala Asn Ile Ile Leu Val Asp Glu  
 85 90 95  
 Ile Asn Arg Ala Pro Ala Lys Thr Gln Ser Ala Leu Phe Glu Val Met  
 100 105 110  
 Glu Glu Arg Gln Ala Ser Ile Asp Gly Thr Thr Tyr Arg Met Gly Glu  
 115 120 125  
 Leu Tyr Thr Ile Leu Ala Thr Gln Asn Pro Val Glu Gln Glu Gly Thr

130 135 140  
 Tyr Lys Leu Pro Glu Ala Gln Leu Asp Arg Phe Leu Met Lys Ile Thr  
 145 150 155 160  
 Met Asp Tyr Pro Ser Leu Asp Glu Glu Ile Asn Ile Leu Glu Arg His  
 165 170 175  
 His Thr Asn Ala Ala Leu Val Lys Leu Glu Glu Ile Gln Pro Val Ile  
 180 185 190  
 Thr Arg Glu Leu Leu Ser Leu Arg Arg Leu Thr Glu Lys Val Phe  
 195 200 205  
 Val Asp Arg Thr Leu Leu Gln Tyr Ile Ala Leu Ile Ala Gln Gln Thr  
 210 215 220  
 Arg Thr Ser Lys Ala Val Tyr Leu Gly Ala Ser Pro Arg Ala Ser Val  
 225 230 235 240  
 Ala Met Leu Gln Ala Ser Lys Ala Tyr Ala Leu Leu Gln Gly Arg Asp  
 245 250 255  
 Phe Val Thr Pro Glu Asp Ile Lys Phe Val Ala Pro Tyr Val Leu Gln  
 260 265 270  
 His Arg Leu Ile Leu Thr Ala Glu Ala Lys Met Glu Gly Tyr Ser Pro  
 275 280 285  
 Val Lys Val Thr Gln Arg Leu Ile Asp Lys Val Glu Val Pro Lys  
 290 295 300

<210> 8460

<211> 339

<212> PRT

<213> B.fragilis

<400> 8460

Phe Ser Tyr Phe Cys Phe Arg Phe Arg Thr Lys Leu Ile Arg Ser Arg  
 1 5 10 15  
 Thr Gly Trp Met Lys Glu Val Thr Phe Ile Arg Arg Asn Ile Glu Lys  
 20 25 30  
 Trp Lys Glu Thr Glu Lys Val Val Glu Gln Ala Asp Lys Leu Thr Pro  
 35 40 45  
 Asp Arg Leu Ala Asp Ala Tyr Thr Glu Leu Thr Ala Asp Leu Ala Phe  
 50 55 60  
 Ala Gln Thr His Tyr Pro Ser Ser Arg Ile Thr Ile Tyr Leu Asn Asn  
 65 70 75 80  
 Leu Ala Ser Ala Leu His Asn Val Ile Tyr Arg Asn Lys Lys Glu Lys  
 85 90 95  
 Trp Thr Arg Ile Phe Thr Phe Trp Thr Gln Glu Val Pro Gln Thr Met  
 100 105 110  
 Tyr His Ala Arg Lys Glu Leu Leu Val Ser Val Leu Ile Phe Trp Ala  
 115 120 125  
 Ser Val Leu Val Gly Ile Val Ser Ala Ala Asn Asp Asp Asn Phe Val  
 130 135 140  
 Arg Leu Ile Leu Gly Asn Gly Tyr Val Asp Met Thr Leu Asp Asn Ile  
 145 150 155 160  
 Ala Arg Gly Glu Pro Met Ala Val Tyr Asn Gly Ser Glu Glu Val Pro  
 165 170 175  
 Met Phe Leu Gly Ile Thr Leu Asn Asn Ile Met Val Ser Phe Asn Val  
 180 185 190  
 Phe Ala Met Gly Leu Leu Thr Ser Phe Gly Thr Gly Trp Leu Leu Phe  
 195 200 205  
 Asn Asn Gly Val Met Leu Gly Ala Phe Gln Thr Phe Phe Phe Lys His  
 210 215 220  
 Gly Leu Leu Gly Glu Ser Met Leu Ala Ile Trp Leu His Gly Thr Leu  
 225 230 235 240  
 Glu Ile Trp Ala Ile Ile Val Ala Gly Ala Gly Leu Ala Leu Gly

245 250 255  
 Asn Gly Trp Leu Phe Pro Gly Thr Tyr Ser Arg Lys Glu Ser Phe Met  
 260 265 270  
 Arg Gly Ala Lys Lys Gly Leu Lys Ile Ile Val Gly Thr Val Pro Ile  
 275 280 285  
 Phe Ile Met Ala Gly Phe Ile Glu Gly Phe Ile Thr Arg His Thr Glu  
 290 295 300  
 Leu Pro Asp Val Leu Arg Leu Gly Ile Ile Leu Leu Ser Leu Ser Phe  
 305 310 315 320  
 Ile Ile Tyr Tyr Tyr Ile Tyr Leu Pro Asn Arg Lys Thr His Gly Ile  
 325 330 335  
 Thr Lys Thr

<210> 8461

<211> 892

<212> PRT

<213> B.fragilis

<400> 8461

Phe Phe Val Phe Leu His Tyr Glu Thr Asp Asp Ala Phe Ile Glu  
 1 5 10 15  
 Glu Gln Tyr Met Arg Arg Leu Gly Cys Leu Phe Ala Ile Gly Met Met  
 20 25 30  
 Trp Leu Cys Ile Val Asp Cys Phe Ser Gln Gly Leu Leu Phe Tyr Gly  
 35 40 45  
 Asn Glu Lys Arg Ile Ser Glu Arg Ala Thr Tyr Ser Val Leu Arg Glu  
 50 55 60  
 Gly His Glu Arg Thr Phe Thr Asn Ala Phe Arg Ile Ser Phe Asp Tyr  
 65 70 75 80  
 Leu Val Arg Asn Val Glu Ser Pro Gly Tyr Ile Leu Tyr Leu Glu Asp  
 85 90 95  
 Arg Asp Ala Gly Lys Thr Tyr Ser Phe Thr Tyr Leu His Lys Pro Gly  
 100 105 110  
 Asp Arg Cys Ser Phe Ser Phe Asn Glu Asp Gly Lys Arg Ile Phe Cys  
 115 120 125  
 Thr Phe Glu Leu Asp Lys Glu Asp Tyr Asp His Arg Trp Leu Pro Val  
 130 135 140  
 Ser Ile Ala Leu Asp Ile Pro Ala Asp Cys Ala Arg Ile Thr Ile Gly  
 145 150 155 160  
 Lys Arg Ser Lys Glu Ile Ser Asn Leu Gly Leu Glu Pro Thr Gly Phe  
 165 170 175  
 Ser Pro His Ile Tyr Phe Gly Lys Cys Glu Tyr Ile Leu Asp Val Ala  
 180 185 190  
 Ser Tyr Ala Ile Arg Asn Leu Ser Leu Thr Asp Gly Glu Glu Ile Met  
 195 200 205  
 Ile Phe Pro Leu Asn Glu Ser Ser Gly Glu Asp Val His Asp Ser Arg  
 210 215 220  
 Gly His Val Val Gly Gln Val Thr Asn Pro Val Trp Leu Ile Asn Gln  
 225 230 235 240  
 Ser Tyr Tyr Trp Lys Glu Leu Phe Thr Asp Tyr Ser Ser Thr Pro Ser  
 245 250 255  
 Gly Leu Asn Phe Asp Lys Thr His Gln Asn Ile Leu Phe Phe Asn Gln  
 260 265 270  
 Asp Ser Leu Ser Ala Phe Asp Leu Tyr Thr His Glu Leu Ser Lys Thr  
 275 280 285  
 Pro Tyr Lys Thr Pro Leu Pro Val Gln Leu Arg Leu Gly Met Asn Phe  
 290 295 300  
 Leu Asp Glu Ala Ser Arg Glu Leu Tyr Thr Tyr Glu Val Ala Asp Ser

305 310 315 320  
 His Gly Asp Ala Met Val Ala Ala Leu Asp Leu Thr Thr Lys Glu Trp  
 325 330 335  
 Arg Pro Ala Ser Ser Asp Tyr Leu Cys Gln Gln Leu His His His Cys  
 340 345 350  
 Gly Phe Phe His Pro Gly Glu Arg Lys Phe Phe Leu Phe Gly Gly Tyr  
 355 360 365  
 Gly Ser Arg Arg Tyr Ser Asn Thr Phe Leu Ala Tyr Asp Leu Asn Thr  
 370 375 380  
 Cys Arg Trp Asp Thr Leu Ala Phe Ser Gly Asp Arg Val Ile Pro Arg  
 385 390 395 400  
 Tyr Phe Ser Gly Met Ala Val Ser Asn Asp Tyr Lys Arg Val Tyr Leu  
 405 410 415  
 Tyr Gly Gly Met Gly Asn Glu Ala Gly Asp Gln Asn Val Gly Arg Asn  
 420 425 430  
 Tyr Leu Tyr Asp Leu Tyr Arg Ile Asp Met Gln Thr Arg Ser Ala Gln  
 435 440 445  
 Lys Leu Trp Glu Ala Lys Ala Pro Ala Ala Asn Pro Val Gly Pro Arg  
 450 455 460  
 Asn Met Ile Leu Ser Ala Asp Glu Lys His Leu Phe Leu Leu Gly Tyr  
 465 470 475 480  
 Pro Glu Tyr Leu Pro Asn Ser Thr Leu Gln Leu Tyr Arg Leu Ser Val  
 485 490 495  
 Arg Asp Gly Glu Cys Glu Ala Val Gly Asp Ser Ile Pro Ile Val Ser  
 500 505 510  
 Glu Glu Ile Ala Thr Asn Ala Asn Leu Tyr Phe Asn Glu Glu Leu Asn  
 515 520 525  
 Glu Phe Tyr Cys Ser Val Gln Glu Phe Glu Lys His Gly Gln Val Thr  
 530 535 540  
 Thr Arg Leu Tyr Ser Leu Ser Ala Pro Pro Val Thr Leu Asp Asp Val  
 545 550 555 560  
 Glu Tyr Tyr Ser Arg Arg Arg Asn Ala Leu Asn Ala Gly Leu Leu Gly  
 565 570 575  
 Ala Val Val Gly Gly Val Leu Leu Leu Ala Ala Cys Val Trp Gly Ile  
 580 585 590  
 Met His His Lys Arg Arg Arg Asp Arg Thr Ser Ala Glu Thr Ala Ser  
 595 600 605  
 Ala Gly Val Arg Pro Glu Glu Val Ser Asp Ile Pro Glu Val Pro Ala  
 610 615 620  
 Val Glu Ser Pro Glu Val Lys Glu Glu Glu Val Glu Lys Glu Pro Ser  
 625 630 635 640  
 Glu Trp Glu Glu Leu Pro Ala Val Leu Pro Pro Asp Lys Asn Ala Ile  
 645 650 655  
 Phe Leu Phe Gly Met Phe Thr Ile Leu Asp Asn Ala Gly Arg Asp Ile  
 660 665 670  
 Thr Tyr Met Leu Ser Pro Lys Leu Arg Thr Ile Phe Leu Tyr Ile Leu  
 675 680 685  
 Leu Asn Ser Val Gly Lys Arg Gly Val Leu Ser Ser Asp Met Asn Gln  
 690 695 700  
 Ile Phe Trp Pro Asp Lys Ser Gly Ser Asn Val Lys Asn Leu Lys Gly  
 705 710 715 720  
 Val Ser Met Asn His Val Arg Lys Ile Leu Gln Asp Val Asp Gly Ile  
 725 730 735  
 Glu Leu Val Tyr Arg Asn Gly Tyr Phe Cys Met Val Phe Gly Glu Glu  
 740 745 750  
 Phe Tyr Cys Asp Tyr Ile Arg Leu Met Asn Leu Thr Ser Pro Glu Lys  
 755 760 765  
 Lys Lys Lys Glu Thr Pro Gly Ala Ile Arg Ala Glu Trp Leu Glu Ile  
 770 775 780

Leu Leu Arg Gly Lys Phe Ile Pro Ala Ala Glu Ser Asp Leu Phe Asp  
 785 790 795 800  
 Tyr Tyr Lys Gln Lys Val Glu Thr Leu Ile His Ser Leu Leu Pro Gly  
 805 810 815  
 Gln Leu Glu Leu Ala Tyr Gly Asp Ala Arg Phe Ser Ile Val Ile Arg  
 820 825 830  
 Leu Cys Asn Ile Leu Phe Ile Ala Asp Pro Leu Ser Asp Leu Ala Leu  
 835 840 845  
 Ala Tyr Thr Val Cys Thr Leu Arg Lys Gln Asn Asn Gln Glu Glu Ala  
 850 855 860  
 Ile Arg Arg Tyr Ala Ala Phe Thr Lys Asp Tyr Arg Arg Val Met Asn  
 865 870 875 880  
 Glu Glu Tyr Gly Ile Ala Phe Ala Asp Ile Lys Val  
 885 890

&lt;210&gt; 8462

&lt;211&gt; 474

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8462

Asn Tyr Glu Phe Phe Val Ile Leu Lys Thr Ser Leu Ile Phe Val Lys  
 1 5 10 15  
 Lys Glu Ile Thr Arg Leu Asn Ser Met Arg Lys Glu Leu Leu Phe Thr  
 20 25 30  
 Val Phe Val Ser Val Ala Phe Ile Phe Leu Gln Ala Phe Trp Ile Val  
 35 40 45  
 Arg Met Tyr Gln Arg Tyr Glu Glu Gln Tyr Thr Glu Gln Val Asn Lys  
 50 55 60  
 Ala Phe Leu Asp Ala Ile Gly Lys Glu Val Glu Leu Arg Ile Arg Tyr  
 65 70 75 80  
 Val Glu Glu Phe Lys Thr Pro Ile Leu Ile Lys Pro Thr Gly Cys Val  
 85 90 95  
 Ser Glu Lys Glu Arg Thr Gly Tyr Lys Gly Asp Thr Ile Asp Leu Val  
 100 105 110  
 Leu Leu Lys Gln Asn Asp Ile Val Arg Asn Val Ser Glu Phe Leu Ala  
 115 120 125  
 Gln Leu Glu Gln Asp Glu Leu Leu Ser Ser Arg Val Ser Pro Val Leu  
 130 135 140  
 Pro Val Ile Asp Ser Leu Leu Arg Glu Glu Leu Ser Gly Leu Lys Ile  
 145 150 155 160  
 Asp His Tyr Leu Ser Leu Tyr Asp Lys Glu Gly Lys Met Val Asp Ser  
 165 170 175  
 Leu Gly Asn Thr Ser Leu Arg Gly Glu Arg Arg Val Ile Lys Val Arg  
 180 185 190  
 Glu Ala Ile Gly Thr Lys Gly Leu Leu Phe Met Gln Ile Glu Ser Lys  
 195 200 205  
 Leu Pro Tyr Asp Ala Ile Leu Ser Lys Met Phe Tyr Ser Leu Leu Val  
 210 215 220  
 Phe Ala Leu Ile Ile Met Phe Val Val Gly Cys Leu Ile His Gln Leu  
 225 230 235 240  
 Arg Val Ile Arg Gln Lys Asp Glu Leu Leu Glu Arg Arg Glu Val Ser  
 245 250 255  
 Val Asn Gly Ile Val His Asp Leu Lys Ser Pro Leu Asn Ala Leu Val  
 260 265 270  
 Thr Leu Thr Gly Trp Leu Met Glu Thr Glu Ser Asp Leu Arg Lys Lys  
 275 280 285  
 Glu Leu Met Ala Glu Val Ile Lys Arg Ala Gly His Gln Thr Ala Gln  
 290 295 300

Ile Glu Ser Ile Leu Val Cys Ala Arg Gly Ala Ala Gln Pro Ile Val  
 305 310 315 320  
 Leu Asn Lys Thr Glu Ile Asn Pro Glu Glu Ile Val Gln Ala Ala Ile  
 325 330 335  
 Asp Asp Ile Cys Val Glu Leu Lys Ala Lys Pro His Ser Ile Glu Val  
 340 345 350  
 Ile Asn Glu Ala Ser Gly Leu Thr Cys Leu Gly Asp Arg Gly Tyr Leu  
 355 360 365  
 Glu Asn Val Met Lys Asn Leu Ile Glu Asn Ala Leu Lys Tyr Ala Asp  
 370 375 380  
 Asp Gly Val Lys Ile Gln Ile Glu Ile Thr Arg Ile Ser Gln Gly Ile  
 385 390 395 400  
 Gln Ile Lys Val Lys Asp Asn Gly Trp Gly Ile Ala Pro Lys Tyr Gln  
 405 410 415  
 Lys Lys Leu Phe Asn Gln Tyr Tyr Gln Val Pro Arg Glu Ala Leu Arg  
 420 425 430  
 Met Arg Lys Gly Tyr Gly Ile Gly Leu Ala Tyr Val Arg His Ile Ile  
 435 440 445  
 Arg Ala His Gly Gly Lys Ile Gln Phe Lys Ser Arg Glu Asn Glu Gly  
 450 455 460  
 Ser Val Phe Thr Phe Tyr Ile Pro Glu Lys  
 465 470

&lt;210&gt; 8463

&lt;211&gt; 213

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8463

Arg Cys Ser Ser Asn Gly Arg Val Ser Leu Arg Ser Ala Trp Trp Arg  
 1 5 10 15  
 Trp Pro Cys Ile Leu Pro Arg Trp Leu Glu Met Val Glu Glu Ala Ile  
 20 25 30  
 Gly Trp Lys Gly Leu Thr Cys Ala Ala Asn Leu Phe Tyr Ala Tyr Thr  
 35 40 45  
 Arg Glu Cys Tyr Asp Asp Val Asp Glu Ala Arg Ile Thr Pro Tyr Thr  
 50 55 60  
 Leu Leu Ser Pro Leu Glu Ile Ser Val Gly Val Val Asp Thr Ala Trp  
 65 70 75 80  
 Phe Trp Lys Ala Tyr Asn Ala Leu Gly Arg Glu Arg Tyr Glu Lys Val  
 85 90 95  
 Phe Ala Ala Ser Lys Ala Val Thr Glu Ser Ser Gly Val Tyr Ser Arg  
 100 105 110  
 Phe Arg Lys Tyr Thr Asp Ala Leu Val Gly Lys Tyr Thr Ile Ala Gln  
 115 120 125  
 Leu Glu Ser Leu Val Met Asp Asn Arg Asn Lys Asp Trp Val Arg Ala  
 130 135 140  
 Tyr Pro Leu Ala Pro Phe Ala Gly Lys Ala Arg Lys Lys Glu Val Asp  
 145 150 155 160  
 Ala Arg Leu Arg Phe Leu Lys Ala Phe Trp Leu Ser Ser Asp Thr Leu  
 165 170 175  
 Ser Gly Arg His Thr Ala Glu Lys Glu Ala Val Gln Val Ala Leu Asp  
 180 185 190  
 Asn Leu Thr Gly Asn Ser Gly Leu Gly Asn Leu Asp Thr Arg Trp Phe  
 195 200 205  
 Lys Lys Lys Val Trp  
 210

&lt;210&gt; 8464

<211> 98  
 <212> PRT  
 <213> B.fragilis

<400> 8464

Asn	His	Ile	Pro	Arg	Lys	Pro	Ala	Trp	Arg	Thr	Thr	Pro	Ser	Thr	Ser
1				5					10					15	
Arg	Val	Arg	Gly	Met	Pro	Glu	His	Trp	Val	Gly	Tyr	Cys	Tyr	Ala	Trp
			20					25					30		
Gly	Tyr	Ala	Asp	Asn	His	Pro	Asn	Thr	Glu	Tyr	Ser	Gln	Phe	Lys	
		35					40				45				
Ile	Asp	Trp	Ala	Val	Asp	Lys	Asp	Gly	Lys	Pro	Val	His	Leu	Asp	Gly
	50					55					60				
Ile	Asp	Phe	Val	Lys	Ile	Tyr	Thr	Ala	Val	Asn	Gln	Asn	Cys	Gly	Trp
65					70					75					80
Leu	Gly	Glu	Ala	Ser	Thr	Glu	Ile	Gln	Ala	Val	Glu	Asp	Leu	His	Tyr
				85					90					95	

Lys Lys

<210> 8465  
 <211> 524  
 <212> PRT  
 <213> B.fragilis

<400> 8465

Leu	Asn	Asn	Pro	Asn	Lys	Thr	Leu	Ile	Tyr	Arg	Leu	Val	Ser	Cys	Leu
1				5					10					15	
Cys	Cys	Thr	Phe	Ala	Val	Gln	Tyr	Leu	Asp	Val	Phe	Gln	Thr	His	Val
			20					25				30			
Arg	Met	Lys	Arg	Arg	Asn	Tyr	Phe	Ile	Phe	Ser	Cys	Leu	Met	Leu	Met
		35					40					45			
Ala	Pro	Ala	Ala	Val	Gln	Ala	Gln	Phe	Asp	Lys	Gly	Leu	Asn	Tyr	Lys
	50					55					60				
Ile	Glu	Thr	Ser	Ala	Thr	Val	Ser	Gly	Gly	His	Asn	Thr	Pro	Phe	Trp
65					70					75					80
Leu	Val	Ala	Asn	Lys	His	Gly	Leu	Ser	Ser	Ile	Arg	Lys	Asn	Asn	Ala
				85					90					95	
Tyr	Leu	Asp	Ala	Gly	Ile	Phe	Arg	Asp	Leu	Glu	Lys	Asp	Lys	Lys	Phe
			100					105					110		
Ser	Tyr	Ala	Phe	Gly	Leu	Glu	Met	Val	Gly	Ala	Ser	Arg	Phe	Thr	Ser
		115					120					125			
Lys	Phe	Phe	Ile	Gln	Gln	Ala	Tyr	Val	Asp	Leu	Arg	Tyr	Arg	Gly	Met
	130					135				140					
Glu	Ile	Ser	Val	Gly	Ser	Lys	Glu	Arg	Gly	Asn	Glu	Met	Lys	Asn	Asp
145					150					155					160
Gln	Leu	Ser	Ser	Gly	Ser	Met	Thr	Phe	Ser	Thr	Asn	Ala	Arg	Pro	Ile
				165					170					175	
Pro	Gln	Val	Arg	Val	Ser	Ile	Pro	Glu	Tyr	Ile	Pro	Phe	Pro	Trp	Thr
		180						185					190		
Lys	Asn	Trp	Leu	His	Ile	Lys	Gly	His	Val	Ala	Tyr	Gly	Met	Phe	Thr
	195					200						205			
Asp	Glu	Lys	Phe	Gln	Glu	Arg	Phe	Thr	Ala	Gly	Arg	Ser	Lys	Tyr	Thr
	210					215					220				
Lys	Glu	Thr	Leu	Phe	His	Ser	Lys	Ala	Ala	Phe	Leu	Lys	Val	Glu	Asn
225					230					235					240
Leu	Gln	Lys	Ser	Pro	Val	Ser	Val	Glu	Leu	Gly	Ile	Glu	Met	Ala	Ala
				245					250					255	

Gln Phe Gly Gly Asp Cys Tyr Tyr Pro Asp Gly Thr Val Leu Arg Thr



260	265	270
Pro Asp Ser Trp Lys Asp Phe Phe Arg Ile Phe Phe Pro Ser Asn Gly		
275	280	285
Asp Ser Gly Ala Ser Glu Ser Asp Gln Ile Asn Ile Leu Gly Asn His		
290	295	300
Val Gly Ser Tyr Ser Ala Ala Val Gly Tyr His Phe Pro Thr Trp Lys		
305	310	315
Ile Lys Ala Tyr Trp Glu His Phe Phe Glu Asp Arg Ser Gly Met Thr		
325	330	335
Leu Thr Tyr Gly Met Trp Arg Asp Cys Leu Ala Gly Leu Glu Val Thr		
340	345	350
Leu Pro Glu Asn Pro Phe Val Lys Thr Ile Val Gly Glu Phe Leu Tyr		
355	360	365
Thr Lys His Gln Ser Gly Ala Phe His Tyr Phe Ala Thr Pro Ala Ile		
370	375	380
Asp His Ser Phe Thr Gly Ala Asp Asn Tyr Tyr Asn Asn Ser Gln Tyr		
385	390	395
Ala Gly Trp Glu His Trp Gly Gln Gly Ile Gly Asn Pro Leu Val Thr		
405	410	415
Ser Pro Ile Tyr Asn Lys Asp Gly Asn Leu Ala Phe Glu Ser Asn Arg		
420	425	430
Val Lys Gly Phe His Ile Gly Leu Asn Gly Ser Pro Thr Pro Glu Ile		
435	440	445
Asp Tyr Arg Ile Leu Val Ser Val Ala Lys His Trp Gly Thr Tyr Gly		
450	455	460
Ser Pro Tyr Arg Asn Ile Arg Arg Asn Gln Asn Gly Leu Leu Glu Val		
465	470	475
Thr Tyr Lys Pro Glu Gln Ile Arg Gly Trp Ser Phe Thr Leu Ala Gly		
485	490	495
Ala Val Asp Gly Gly Asn Met Leu Gly Glu Ser Trp Gly Gly Met Leu		
500	505	510
Thr Ile Arg Lys Thr Gly Leu Ile Gly Lys Lys Lys		
515	520	

&lt;210&gt; 8466

&lt;211&gt; 118

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8466

Tyr Ser Phe Tyr Leu Cys Ser Ala Leu Val Cys Ile Leu Arg Val Pro	
1 5 10 15	
Gly Met Gln Leu Lys Gly Asn Gln Val Gln Ile Leu Asn Ser Pro Ala	
20 25 30	
Ala Val Ser Phe Thr Ser Asp Cys Cys Lys Gln Pro Pro Leu Ala Thr	
35 40 45	
Gly Lys Arg Phe Leu Gly Arg Arg Leu Ser Thr Glu Thr Ser Gln Lys	
50 55 60	
Thr Cys Leu Cys Ile Phe Phe Ile Ala Phe Glu Glu Lys Ala Leu Ser	
65 70 75 80	
Leu Met Ser Arg Asn Tyr Ser Ile Arg His Phe Ile His His Ser Asp	
85 90 95	
Ser Glu Lys Val Ser Tyr Asp Asn Lys Leu Cys Gln Val Tyr Leu Val	
100 105 110	
Cys Pro Ala Glu Val Ser	
115	

&lt;210&gt; 8467

&lt;211&gt; 597

<212> PRT  
 <213> B.fragilis

<400> 8467

Asn	Ile	Thr	Tyr	Met	Asn	Leu	Pro	Val	Thr	Gln	Lys	His	Phe	Leu	Ser
1				5					10					15	
Phe	Ser	Arg	Lys	Leu	Phe	Leu	Ser	Val	Ile	Ser	Leu	Phe	Leu	Val	Phe
			20					25					30		
Ala	Ala	Cys	Phe	Met	Ala	Tyr	Gln	Tyr	Gln	Arg	Glu	Lys	Glu	Tyr	Lys
		35					40					45			
Val	Glu	Leu	Leu	Asn	Ile	Gln	Leu	Gln	Asp	Cys	Asn	Asn	Leu	Leu	Tyr
	50					55					60				
Glu	Lys	Leu	Tyr	Asp	His	Pro	Gln	Asp	Met	Thr	Glu	Val	Ile	Ser	Asp
65					70					75				80	
Tyr	Leu	Gln	His	Asn	Val	Leu	Lys	Asp	Leu	Arg	Ile	Thr	Val	Val	Asn
				85					90					95	
Leu	Asp	Gly	Lys	Val	Leu	Phe	Asp	Ser	Gln	Glu	Gln	Asn	Val	Glu	Gln
			100					105					110		
Leu	Gly	Asn	His	Leu	Asp	Arg	Glu	Glu	Val	Gln	Lys	Ala	Leu	Tyr	Asn
		115					120					125			
Gly	Val	Gly	Phe	Asp	Val	Arg	Arg	Thr	Ser	Glu	Thr	Thr	Gly	Val	Pro
	130					135						140			
Tyr	Phe	Tyr	Ser	Ala	Thr	Leu	Tyr	Lys	Asp	Tyr	Ile	Ile	Arg	Ser	Ala
145					150					155					160
Leu	Pro	Tyr	Ser	Val	Ser	Leu	Ile	Asn	Asn	Leu	Lys	Ala	Asp	Pro	His
				165					170					175	
Tyr	Ile	Trp	Phe	Thr	Val	Ile	Val	Thr	Leu	Leu	Leu	Met	Ile	Ile	Phe
			180					185					190		
Tyr	Lys	Phe	Thr	Asn	Lys	Leu	Gly	Thr	Ser	Ile	Ser	Gln	Leu	Arg	Glu
		195					200					205			
Phe	Ala	Met	Arg	Ala	Asp	Arg	Asn	Glu	Pro	Ile	Glu	Met	Ala	Met	Gln
	210					215					220				
Ser	Ala	Phe	Pro	His	Asn	Glu	Leu	Gly	Glu	Ile	Ser	Gln	His	Ile	Ile
225					230					235					240
Gln	Ile	Tyr	Lys	Arg	Leu	His	Glu	Thr	Lys	Glu	Ala	Leu	Tyr	Ile	Glu
			245						250					255	
Arg	Glu	Lys	Leu	Ile	Thr	His	Leu	Gln	Ile	Ser	His	Glu	Gly	Leu	Gly
			260					265					270		
Val	Phe	Asn	Lys	Asp	Lys	Lys	Glu	Ile	Leu	Val	Asn	Asn	Leu	Phe	Thr
		275					280					285			
Gln	Tyr	Ser	Asn	Leu	Ile	Ser	Asp	Ser	Asn	Leu	Glu	Thr	Ala	Glu	Glu
	290					295					300				
Val	Phe	Asn	Ile	Ser	Glu	Leu	Lys	Glu	Ile	Thr	Asp	Phe	Ile	Asn	Lys
305					310					315					320
Ala	Pro	Lys	Arg	Pro	Val	Gly	Lys	Glu	Glu	Lys	Arg	Met	Ser	Ile	Thr
			325						330					335	
Ile	Asn	Lys	Asn	Gly	Lys	Thr	Phe	Ile	Val	Glu	Cys	Ile	Ile	Phe	Gln
			340				345						350		
Asp	Met	Ser	Phe	Glu	Ile	Ser	Ile	Asn	Asp	Val	Thr	Gln	Glu	Glu	Glu
	355						360					365			
Gln	Ile	Arg	Leu	Lys	Arg	Gln	Leu	Thr	Gln	Asn	Ile	Ala	His	Glu	Leu
	370					375					380				
Lys	Thr	Pro	Val	Ser	Ser	Ile	Gln	Gly	Tyr	Leu	Glu	Thr	Ile	Val	Asn
385					390					395					400
Asn	Glu	Asn	Leu	Pro	Lys	Glu	Lys	Met	Asn	Val	Phe	Leu	Glu	Arg	Cys
			405						410					415	
Tyr	Ala	Gln	Ser	Asn	Arg	Leu	Ser	Arg	Leu	Leu	Arg	Asp	Ile	Ser	Val
			420					425					430		
Leu	Thr	Arg	Met	Asp	Glu	Ala	Ala	Asn	Met	Ile	Asp	Met	Glu	Lys	Met

435	440	445
Asp Ile Ser Val Leu Val Thr Asn Ile Val Asn Glu Val Ser Leu Glu		
450	455	460
Leu Glu Glu Lys His Ile Thr Val Val Asn Ser Leu Lys Lys Glu Ile		
465	470	475
Gln Ile Arg Gly Asn Tyr Ser Leu Leu Tyr Ser Ile Phe Arg Asn Leu		
485	490	495
Met Asp Asn Ala Ile Ala Tyr Ala Gly Asn Asn Ile Gln Ile His Ile		
500	505	510
Asn Cys Phe Arg Glu Asp Glu Lys Phe Tyr Tyr Phe Ser Phe Ala Asp		
515	520	525
Thr Gly Val Gly Val Ser Pro Glu His Leu Asn Arg Leu Phe Glu Arg		
530	535	540
Phe Tyr Arg Val Asp Lys Gly Arg Ser Arg Lys Leu Gly Gly Thr Gly		
545	550	555
Leu Gly Leu Ala Ile Val Lys Asn Ala Val Ile Leu His Gly Gly Asn		
565	570	575
Ile Ser Ala Lys Asn Ser Gln Gly Gly Gly Leu Glu Phe Val Phe Thr		
580	585	590
Leu Ala Lys Glu Arg		
595		

<210> 8468  
 <211> 323  
 <212> PRT  
 <213> B.fragilis

<400> 8468

Lys Tyr Tyr Leu Cys Pro Ile Ser Lys Gln Lys Ile Met Met Asn Asn		
1	5	10
Val Lys Tyr Leu Ser Phe Ala Leu Ile Leu Ala Phe Ser Ala Cys Lys		
20	25	30
Ser Gly Ser Ala Ser Ser Gln Glu Pro Ser Glu Lys Gln Asp Thr Val		
35	40	45
Lys Ile Phe Asn Leu Pro Gln Ile Pro Val Val Leu Asn Thr Val Glu		
50	55	60
Gln Arg Thr Asp Tyr Met Val Lys His Tyr Trp Asp Arg Phe Asp Phe		
65	70	75
Ser Asp Thr Thr Tyr Ile Asn Gln Ala Glu Val Pro Glu Gln Ala Trp		
85	90	95
Val Asp Tyr Cys Asp Leu Leu Glu His Val Pro Leu Pro Val Ala Gln		
100	105	110
Thr Ala Met Lys Glu Thr Phe Asn Arg Ala Glu Lys Asn Arg Lys Met		
115	120	125
Leu His Phe Phe Glu Glu Leu Ala Asp Lys Tyr Leu Tyr Asp Pro Asn		
130	135	140
Ser Pro Met Arg Asn Glu Glu Phe Tyr Ile Pro Val Leu Glu Ala Leu		
145	150	155
Ile Ala Ser Pro Ala Leu Asp Glu Thr Ala Lys Ile Arg Pro Gln Ala		
165	170	175
Arg Leu Glu Leu Ala Gln Lys Asn Arg Leu Gly Thr Lys Ala Leu Asn		
180	185	190
Phe Thr Tyr Thr Leu Asp Ser Gly Ala Lys Gly Thr Leu Tyr Gln Phe		
195	200	205
Pro Ala Glu Tyr Thr Leu Leu Phe Ile Asn Asn Pro Gly Cys His Ala		
210	215	220
Cys Ala Glu Met Ile Glu Gly Leu Lys Ala Ser Pro Val Ile Asn Gly		
225	230	235
Phe Thr Ala Ala Lys Lys Leu Lys Val Leu Ser Ile Tyr Pro Asp Glu		

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<210> 8469
<211> 632
<212> PRT
<213> B.fragilis
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Tyr 1	Thr	Asn	His	Leu 5	Leu	Ser	His	Ser	Ile 10	Ile	Met	Thr	Pro	Tyr 15	Leu
Gln	Val	Asp	Asn 20	Leu	Thr	Lys	Ser	Phe 25	Gly	Asp	Leu	Val	Leu 30	Phe	Glu
Asn	Ile	Ser 35	Phe	Gly	Ile	Ala 40	Glu	Gly	Gln	Arg	Ile	Gly 45	Leu	Ile	Ala
Lys 50	Asn	Gly	Thr	Gly	Lys	Thr 55	Thr	Leu	Leu	Asn	Ile 60	Leu	Ser	Gly	Lys
Glu 65	Gly	Tyr	Asp	Ser 70	Gly	Asn	Ile	Val	Phe 75	Arg	Arg	Asp	Leu	Arg	Val
Asp	Tyr	Leu	Glu 85	Gln	Asp	Pro	Gln	Tyr 90	Pro	Glu	Glu	Leu	Thr 95	Val	Leu
Glu	Ala	Cys	Phe 100	His	His	Gly	Asn 105	Ser	Thr	Val	Glu	Leu 110	Ile	Lys	Glu
Tyr	Glu	Arg 115	Cys	Met	Glu	Thr 120	Glu	Gly	His	Pro	Gly 125	Leu	Asp	Asp	Leu
Leu 130	Val	Arg	Met	Asp	His	Glu 135	Lys	Ala	Trp	Glu	Tyr 140	Glu	Gln	Lys	Ala
Lys 145	Gln	Ile	Leu	Ser 150	Gln	Leu	Lys	Ile	Arg	Asn 155	Phe	Asp	Gln	Gln	Val
Lys	His	Leu	Ser 165	Gly	Gly	Gln	Leu	Lys 170	Arg	Val	Ala	Leu 175	Ala	Asn	Ala
Leu	Ile	Thr 180	Glu	Pro	Asp	Leu	Leu 185	Ile	Leu	Asp	Glu	Pro 190	Thr	Asn	His
Leu	Asp 195	Leu	Asp	Met	Thr	Glu 200	Trp	Leu	Glu	Glu	Tyr 205	Leu	Arg	Arg	Thr
Asn 210	Leu	Ser	Leu	Leu	Met 215	Val	Thr	His	Asp	Arg	Tyr 220	Phe	Leu	Asp	Arg
Val 225	Cys	Ser	Glu	Ile 230	Ile	Glu	Ile	Asp	Asn 235	Arg	Gln	Val	Tyr	Gln	Tyr
Lys	Gly	Asn	Tyr 245	Ser	Tyr	Tyr	Leu	Glu 250	Lys	Arg	Gln	Glu 255	Arg	Ile	Glu
Ala	Lys	Ser 260	Val	Glu	Ile	Glu	Arg 265	Ala	Asn	Asn	Leu	Tyr 270	Arg	Thr	Glu
Leu	Asp 275	Trp	Met	Arg	Arg	Met 280	Pro	Gln	Ala	Arg	Gly	His 285	Lys	Ala	Arg
Tyr	Arg 290	Glu	Asp	Ala	Phe 295	Tyr	Glu	Leu	Glu	Lys 300	Val	Ala	Lys	Gln	Arg
Phe 305	Asn	Asn	Asp	Asn 310	Val	Lys	Leu	Glu 315	Val	Lys	Ala	Ser 320	Tyr	Ile	Gly
Ser	Lys	Ile	Phe	Glu	Ala	Asp	His	Leu	Tyr	Lys	Ser	Phe	Gly	Asp	Leu

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

325 330 335  
 Lys Ile Leu Glu Asp Phe Ser Tyr Ile Phe Ala Arg Tyr Glu Lys Met  
 340 345 350  
 Gly Ile Val Gly Asn Asn Gly Thr Gly Lys Ser Thr Phe Ile Lys Ile  
 355 360 365  
 Leu Met Gly Gln Val Gln Pro Asp Ser Gly Thr Leu Asp Ile Gly Glu  
 370 375 380  
 Thr Val Arg Phe Gly Tyr Ser Gln Asp Gly Leu Gln Phe Asp Glu  
 385 390 395 400  
 Gln Met Lys Val Ile Asp Val Val Gln Asp Ile Ala Glu Val Ile Glu  
 405 410 415  
 Leu Gly Asn Gly Lys Lys Leu Thr Ala Ser Gln Phe Leu Gln His Phe  
 420 425 430  
 Leu Phe Thr Pro Glu Thr Gln His Ser Tyr Val Tyr Lys Leu Ser Gly  
 435 440 445  
 Gly Glu Arg Arg Arg Leu Tyr Leu Cys Thr Val Leu Met Arg Asn Pro  
 450 455 460  
 Asn Phe Leu Val Leu Asp Glu Pro Thr Asn Asp Leu Asp Ile Ile Thr  
 465 470 475 480  
 Leu Asn Val Leu Glu Glu Tyr Leu Gln Asn Phe Lys Gly Cys Val Ile  
 485 490 495  
 Val Val Ser His Asp Arg Tyr Phe Met Asp Lys Val Val Asp His Leu  
 500 505 510  
 Leu Val Phe Asn Gly Gln Gly Asp Ile Arg Asp Phe Pro Gly Asn Tyr  
 515 520 525  
 Ser Asp Tyr Arg Asp Trp Lys Glu Ala Lys Ser Gln Lys Glu Lys Glu  
 530 535 540  
 Ala Glu Lys Pro Gln Glu Glu Lys Thr Ala Arg Val Arg Leu Asn Glu  
 545 550 555 560  
 Lys Arg Lys Met Ser Phe Lys Glu Lys Arg Glu Phe Glu Gln Leu Glu  
 565 570 575  
 Lys Glu Ile Ala Glu Leu Glu Thr Glu Lys Leu Gln Ile Glu Glu Leu  
 580 585 590  
 Leu Cys Ser Gly Thr Leu Ser Val Asp Glu Leu Thr Glu Lys Ser Lys  
 595 600 605  
 Arg Leu Pro Glu Val Asn Asp Leu Ile Asp Glu Lys Thr Met Arg Trp  
 610 615 620  
 Leu Glu Leu Ser Glu Ile Glu Ser  
 625 630

&lt;210&gt; 8470

&lt;211&gt; 284

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8470

Gly Tyr Gln His Ser Glu Ser Asn Met Ile Gln Gly Lys Lys Phe Ile  
 1 5 10 15  
 Ser Pro Gly Thr Trp Phe Ser Met Ile Tyr Pro Ser Asp Trp Ser Glu  
 20 25 30  
 Phe Glu Asp Gly Glu Gly Ser Phe Leu Phe Tyr Asn Pro Glu His Trp  
 35 40 45  
 Thr Gly Asn Phe Arg Ile Ser Ala Tyr Lys Glu Asp Ala Ala Ala Pro  
 50 55 60  
 Gly Gly Met Asn Tyr Gly Lys Asp Ser Val Arg Gln Glu Leu Lys Glu  
 65 70 75 80  
 Asn Pro Ser Ala Ser Leu Val Lys Val Gly His Leu Glu Cys Ala Tyr  
 85 90 95  
 Ser Lys Glu Met Phe Glu Glu Glu Gly Thr Tyr Tyr Thr Ser His Leu

100	105	110
Trp Val Thr Gly Ile Asp Asn Val Ala Phe Glu Cys Ser Phe Thr Val		
115	120	125
Pro Lys Gly Glu His Val Asp Glu Ala Glu Lys Ile Ile Ser Ser Leu		
130	135	140
Glu Ile Arg Lys Asp Gly Gln Lys Tyr Pro Ala Glu Ile Ile Pro Ile		
145	150	155
Arg Leu Ser Glu Ile Tyr Gln Val Asn Glu Ala Tyr Glu Trp Val Thr		
165	170	175
Asp Thr Val Lys Thr Gln Leu Lys Lys Asp Phe Gln Gly Leu Glu Glu		
180	185	190
Asp Leu Gln Lys Ile Gln Asp Val Ile Asp Ser Gly Val Leu Ser Pro		
195	200	205
Lys Lys Lys Glu Pro Trp Leu Ala Phe Gly Ile Ala Ile Cys Thr Ile		
210	215	220
Leu Ala Asn Glu Val Glu Gly Met Glu Trp Met Thr Leu Val Asp Gly		
225	230	235
Asn Arg Glu Val Pro Val Leu Arg Tyr Glu Gly Ser Glu Gln Leu Ile		
245	250	255
Asp Pro Met Lys Leu Leu Trp Ser Arg Val Lys Ala Gly Glu Ala Cys		
260	265	270
Glu Val Ala Glu Ala Tyr Lys Gln Ala Leu Ile His		
275	280	

&lt;210&gt; 8471

&lt;211&gt; 129

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8471

Glu Glu Met Lys Lys Gly Ile Leu Leu Leu Phe Val Val Leu Met Gly		
1	5	10
Phe Thr Ser Cys Gly Lys Lys Phe Gly His Arg Tyr Leu Asp Gly Met		
20	25	30
Trp Gln Met Gln Arg Ile Glu Tyr Lys Asp Gly Asn Ile Asp Thr Pro		
35	40	45
Leu Asp Thr Tyr Phe Ser Phe Gln Met Asp Ile Ile His Leu Arg Lys		
50	55	60
Leu Gly Asn Ser Glu Phe Tyr Gly Lys Tyr Val Tyr Glu Asn Asp Ser		
65	70	75
Met His Ile Gln Val Leu Asp Ala Thr Ala Glu Gln Met Lys Val Phe		
85	90	95
Gly Met Asp Gly Arg Val Gln Asp Phe Ala Val Glu Lys Leu Asn Ser		
100	105	110
Asn Lys Leu Val Leu Gln Ser Asp Tyr Ala Arg Leu Glu Phe Arg Lys		
115	120	125

Tyr

&lt;210&gt; 8472

&lt;211&gt; 582

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8472

Asp Thr Lys Asp Thr Pro Asp Ile Glu Ser Val Ile Ile Lys Arg Ile		
1	5	10
Ser Asn Met Lys Thr Thr Ser Phe Asn Asn Gly Arg Ser Asn Ser Ser		
20	25	30

Ser Leu Phe Arg Arg Gly Ile Gly Gly Val Ser Phe Phe Phe Leu Leu  
 35 40 45  
 Phe Leu Leu Leu Phe Ala Ser Cys Asp Asp Leu Glu Asp Thr Asp Thr  
 50 55 60  
 Pro Ser Gly Gly Asp Gly Gly Met Pro Val Glu Thr Gly Thr Ala Glu  
 65 70 75 80  
 Leu Tyr Ile Leu Ser Glu Gly Leu Phe Asn Leu Asn Asn Ser Ser Leu  
 85 90 95  
 Ala Leu Tyr Ser Phe Lys Asn Asn Gln Leu Asn Thr Asp Tyr Phe Arg  
 100 105 110  
 Ser Ile Asn Arg Arg Gly Leu Gly Asp Thr Ala Asn Asp Met Gly Ile  
 115 120 125  
 Tyr Gly Ser Lys Leu Tyr Ile Val Val Asn Val Ser Ser Gln Ile Glu  
 130 135 140  
 Val Val Asp Leu Gln Ser Gly Lys Ser Val Lys Gln Ile Pro Met Leu  
 145 150 155 160  
 Ser Glu Asn Gly Ser Ser Arg Gln Pro Arg Asn Ile Ala Phe Asp Gly  
 165 170 175  
 Gly Lys Ala Tyr Val Cys Ser Phe Asp Gly Thr Val Ala Arg Ile Asp  
 180 185 190  
 Thr Ala Ser Leu Ser Ile Asp Ala Leu Thr Arg Ala Gly Arg Asn Pro  
 195 200 205  
 Asp Gly Ile Cys Val Gln Asn Gly Lys Leu Tyr Val Ser Asn Ser Gly  
 210 215 220  
 Gly Leu Asp Trp Glu Gly Ile Gly Val Asp Arg Thr Val Ser Val Ile  
 225 230 235 240  
 Asp Ile Pro Ser Phe Thr Glu Ile Lys Lys Ile Glu Val Gly Pro Asn  
 245 250 255  
 Pro Gly Asp Ile Gln Ala Gly Pro Asp Gly Ser Val Tyr Val Ala Thr  
 260 265 270  
 His Gly Glu Asn Ile Glu Ala Gly Asp Tyr His Phe Val Gln Ile Asp  
 275 280 285  
 Gly His Thr Asp Gln Val Val Arg Thr Phe Asp Glu Lys Val Leu Ser  
 290 295 300  
 Phe Thr Ile His Asp Asn Met Ala Tyr Leu Tyr Asn Tyr Asp Tyr Arg  
 305 310 315 320  
 Thr Gln Asp Ser Gln Ile Lys Val Phe Asn Leu Lys Ala Gly Lys Thr  
 325 330 335  
 Glu Arg Glu Asn Phe Ile Thr Asp Gly Thr Thr Ile Arg Thr Pro Tyr  
 340 345 350  
 Ser Ile Ser Val Asn Pro Tyr Ser Gly Asn Val Tyr Ile Thr Asp Ala  
 355 360 365  
 Tyr Asp Tyr Lys Val Lys Gly Asp Val Leu Cys Phe Ser Pro Gln Gly  
 370 375 380  
 Gln Leu Ile Phe Lys Leu Pro Asn Val Gly Ile Asn Ser Asn Thr Val  
 385 390 395 400  
 Leu Phe Arg Asn Lys Ala Ser Gln Gly Asn Pro Asp Glu Asn Pro Ala  
 405 410 415  
 Asp Ala Glu Ala Gly Ala Phe Ala Asn Lys Val Leu Glu Tyr Asn Pro  
 420 425 430  
 Ala Pro Ser Gln Tyr Met Asn Thr Ser Tyr Thr Ala Tyr Glu Glu Gly  
 435 440 445  
 Phe Thr Gly Ile Gln Val Leu Ala Arg Ala Thr Glu Leu Leu Gln Asp  
 450 455 460  
 Arg Thr Thr Cys Leu Phe Thr Leu Gly Gly Phe Gly Gly Asn Ile Thr  
 465 470 475 480  
 Val Gly Phe Asp His Thr Ile Pro Asn Val Pro Gly Glu Tyr Asp Phe  
 485 490 495  
 Lys Ile Tyr Gly Asn Ala Tyr Tyr Asp Met Tyr Gly Thr Leu Leu Asp

500 505 510  
 Lys Pro Gly Gly Asn Ser Glu Pro Gly Ile Val Leu Val Ser Lys Asp  
 515 520 525  
 Thr Asn Gly Asn Gly Leu Pro Asp Asp Glu Trp Tyr Glu Leu Ala Gly  
 530 535 540  
 Ser Glu Tyr Asn Ser Pro Ala Thr Ile Arg Asn Tyr Glu Ile Ile Tyr  
 545 550 555 560  
 Tyr Pro Ser Pro Ser Ala Asp Gly Asp Val Lys Trp Lys Asp Asn Gln  
 565 570 575  
 Gly Lys Glu Gly Tyr Ile  
 580

<210> 8473  
 <211> 413  
 <212> PRT  
 <213> B.fragilis

<400> 8473

Ile Glu Thr Cys Glu Pro Asp Arg Cys Arg Pro Ser Ser Pro Val Val  
 1 5 10 15  
 Lys Thr Thr Ala Val Phe Leu Ala Asn Val Glu Lys Thr Gln Phe Pro  
 20 25 30  
 Ile Pro Val Ser Gly Gly Gly Thr Asn Tyr Ala Asp Val Leu Thr Asn  
 35 40 45  
 Tyr Gln Thr Thr Arg Ala Asn Ala Arg Ile Val Leu Pro Gly Ala Glu  
 50 55 60  
 Phe Thr Asp Thr Ser Glu Phe Tyr Leu Ala Asn Val Ser Phe Ser Asp  
 65 70 75 80  
 Thr Ser Ala Gln Pro Tyr Val Leu Leu Gln Arg Ile Ile Ser Met Leu  
 85 90 95  
 Asn Leu Arg Arg Val Phe Val Asp Ala Gln Thr Ala Leu Asn Ser Leu  
 100 105 110  
 Thr Asn Asn Ile Val Thr Gln Val Gly Tyr Lys Asn Ile Ile Arg Thr  
 115 120 125  
 Thr Val Gln Gly Ile Leu Pro Gly Leu Leu Lys Thr Ala Met Asn Leu  
 130 135 140  
 Gly Pro Val Gly Asn Leu Val Tyr Asp Val Val Gly Gly Leu Asp Ala  
 145 150 155 160  
 Ala Val Asn Leu Val Val Ala Ala Leu Val Glu Pro Val Val Asp Ala  
 165 170 175  
 Leu Tyr Ala Gln Leu Leu Gln Gly Leu Val Asn Gln Ile Gly Leu Thr  
 180 185 190  
 Leu Ser Gly Asn Ala Thr Gln Asn Gly Ala Leu Gly Ala Leu Gly Asp  
 195 200 205  
 Leu Leu Asn Pro Trp Arg Gly Ser Asp Ala Ala Tyr Ala Leu Val Thr  
 210 215 220  
 Ile Asn Asn Phe Pro Lys Thr Met Asp Leu Asp Leu Asn Val Lys Asp  
 225 230 235 240  
 Phe Tyr Thr Gly Asn His Arg Phe Arg Tyr Gly Phe Thr Pro Thr Pro  
 245 250 255  
 Gly Thr Thr Asn Ser Glu Lys Asp Ile Leu Ile Arg Gly Phe His Gly  
 260 265 270  
 Leu Tyr Asp Val Arg Glu Ile His Val Ala Lys Pro Gly Leu Ile Ser  
 275 280 285  
 Gly Leu Leu Val Asp Asp Val Ile Asp Gly Pro Leu Leu Leu Asn Gly  
 290 295 300  
 Val Phe Val Asn Ile Thr Asp Pro Ile Gln Ala Thr Val Asn Thr Asn  
 305 310 315 320  
 Tyr Arg Tyr Arg Ser Asn Tyr Ser Phe Val Ser Leu Gly Leu Lys Ser



325 330 335  
 Tyr Ala Gln Gln Ser Asp Gly Asn His Ser Leu Thr Leu Ser Val Gln  
 340 345 350  
 Leu Lys Asn Ile Ala Asn Leu Asp Gly Ile Leu Gly Gly Ile Pro Val  
 355 360 365  
 Leu Gly Pro Val Leu Asn Gly Thr Val Arg Leu Leu Ile Gly Asn Ile  
 370 375 380  
 Thr Val Thr Val Pro Val Asn Leu Pro Leu Leu Gly Thr Asp Asn Leu  
 385 390 395 400  
 Thr Leu Ser Gly Ser Trp Ser Thr Pro Pro Val Gln Tyr  
 405 410

<210> 8474  
 <211> 702  
 <212> PRT  
 <213> B.fragilis

<400> 8474

Thr Leu Pro Ser Leu Phe Ser Val Ser Gly Arg Ser Glu Leu Val Arg  
 1 5 10 15  
 Thr Phe Tyr Gln Gln Lys Thr Lys Met Asn Ile Leu Arg Leu Pro Lys  
 20 25 30  
 Leu Leu Tyr Ser Cys Val Ala Phe Cys Cys Cys Gln Ala Leu Thr Val  
 35 40 45  
 Ser Leu Ser Ala Gln Gln Gln Lys Ala Asp Thr Ala Arg Thr Tyr Ser  
 50 55 60  
 Ile Pro Glu Val Thr Val Ala Glu Ala Tyr His Thr Ser Glu Val Arg  
 65 70 75 80  
 Ala Met Ala Pro Thr Gln Val Phe Ser Lys Glu Glu Leu Lys Ser Leu  
 85 90 95  
 Asn Val Leu Gln Val Ser Asp Ala Val Lys His Phe Ala Gly Val Thr  
 100 105 110  
 Val Lys Asp Tyr Gly Gly Ile Gly Gly Leu Lys Thr Val Ser Leu Arg  
 115 120 125  
 Ser Leu Gly Ala Glu His Thr Ala Val Gly Tyr Asp Gly Ile Thr Ile  
 130 135 140  
 Ser Asp Cys Gln Thr Gly Gln Ile Asp Ile Gly Arg Phe Ser Leu Asp  
 145 150 155 160  
 Asn Val Asp Arg Leu Ser Leu Ser Asn Gly Gln Ser Asp Asn Ile Phe  
 165 170 175  
 Gln Pro Ala Arg Phe Phe Ala Ser Ala Gly Ile Leu Asn Ile Gln Thr  
 180 185 190  
 Leu Thr Pro Gln Phe Lys Asp Asn Arg Arg Thr Asn Leu Ser Ala Ser  
 195 200 205  
 Phe Lys Thr Gly Ser Trp Gly Leu Val Asn Pro Ser Leu Leu Leu Glu  
 210 215 220  
 Gln Lys Leu Ser Arg Lys Trp Val Leu Ser Ala Asn Gly Glu Trp Met  
 225 230 235 240  
 Ser Ala Asp Gly His Tyr Pro Phe Thr Leu His Tyr Gly Glu Asp Asn  
 245 250 255  
 Asp Leu Thr Ser Arg Glu Lys Arg Lys Asn Thr Glu Val Lys Asn Leu  
 260 265 270  
 Arg Ala Glu Ala Gly Leu Phe Gly Asn Phe Ser Asp Thr Glu Gln Trp  
 275 280 285  
 Arg Leu Lys Ala Tyr Tyr Tyr Gln Ser Ser Arg Gly Leu Pro Asn Ala  
 290 295 300  
 Thr Thr Tyr Tyr Tyr Asp Tyr Ser Ser Gln His Leu Trp Asp Lys Asn  
 305 310 315 320  
 Val Phe Val Gln Ser Gln Tyr Lys Lys Glu Phe Ser Arg Gln Trp Val

325 330 335  
 Phe Gln Thr Ser Ala Lys Trp Asn Trp Ser Tyr Gln Arg Tyr Leu Asp  
 340 345 350  
 Pro Asp Tyr Lys Gly Ser Glu Gly Lys Thr Glu Asn Ser Tyr Tyr Gln  
 355 360 365  
 Gln Glu Tyr Tyr Leu Ser Ala Ser Ala Leu Tyr Arg Val Leu Ser Asn  
 370 375 380  
 Leu Ser Phe Ser Leu Ser Thr Asp Ala Ser Ile Asn Arg Leu Asn Ala  
 385 390 395 400  
 Asn Leu Lys Asp Phe Ala Tyr Pro Thr Arg Tyr Ser Trp Leu Thr Ala  
 405 410 415  
 Phe Ala Gly Lys Tyr Val Asn Asp Trp Leu Thr Ala Ser Ala Ser Val  
 420 425 430  
 Leu Ala Thr Val Ile Asn Glu Glu Val Arg Gln Gly Ser Ala Ala Ala  
 435 440 445  
 Asn Arg Arg Lys Leu Ser Pro Tyr Val Ser Ala Ser Phe Lys Pro Phe  
 450 455 460  
 Ala Ser Glu Glu Phe Arg Ile Arg Leu Phe Tyr Lys Asp Ile Phe Arg  
 465 470 475 480  
 Leu Pro Ser Phe Asn Asp Leu Tyr Tyr Gly Gln Val Gly Asn Thr Asn  
 485 490 495  
 Leu Lys Pro Glu Ser Thr Thr Gln Tyr Asn Leu Gly Leu Thr Tyr Ser  
 500 505 510  
 Arg Ser Ile Asn Glu Leu Ile Pro Tyr Val Ser Val Thr Ala Asp Ala  
 515 520 525  
 Tyr Tyr Asn Lys Val Lys Asp Lys Ile Ile Ala Ile Pro Thr Lys Asn  
 530 535 540  
 Leu Phe Ile Trp Ser Met Val Asn Leu Gly Lys Val Asp Ile Lys Gly  
 545 550 555 560  
 Ile Asp Ile Ala Gly Asn Ile Ser Leu Gln Pro Trp Glu Lys Leu Arg  
 565 570 575  
 Val Asn Leu Ser Gly Asn Tyr Thr Tyr Gln Arg Ala Leu Asp Met Thr  
 580 585 590  
 Glu Pro Gly Gly Lys Thr Tyr Lys Gln Gln Ile Ala Tyr Thr Pro Arg  
 595 600 605  
 Val Ser Gly Ser Gly Gln Ala Gly Ile Glu Thr Pro Trp Val Asn Leu  
 610 615 620  
 Ser Tyr Ser Phe Leu Phe Ser Gly Lys Arg Tyr Met Leu Gly Gln Asn  
 625 630 635 640  
 Leu Arg Glu Asn Arg Leu Asp Ser Tyr Ser Asp His Ser Val Ser Val  
 645 650 655  
 Ser Arg Asp Leu Arg Ile Arg Asn Val Asn Thr Ser Leu Thr Val Glu  
 660 665 670  
 Val Leu Asn Leu Leu Asp Lys Asn Tyr Glu Ile Val Lys Asn Phe Pro  
 675 680 685  
 Met Pro Gly Arg Ser Val Arg Val Thr Met Lys Val Arg Tyr  
 690 695 700

<210> 8475  
 <211> 483  
 <212> PRT  
 <213> B.fragilis

<400> 8475  
 Ser Leu Tyr Gly Asp Thr Gly Gly Gly Arg Phe Thr Leu Gln Glu Ile  
 1 5 10 15  
 Ile Ile Ser Leu Ile Tyr Ile Phe Asn Phe Cys Asn Met Lys Lys Ile  
 20 25 30  
 Asn Ala Leu Ile Thr Lys Met Cys Phe Ile Ala Leu Cys Ala Leu Pro

	35		40		45														
Ile	Ile	Ile	Ser	Ser	Cys	Asn	Asp	Asp	Asp	Asp	Lys	Tyr	Tyr	Tyr	Pro				
	50					55					60								
Thr	Asn	Phe	Glu	Asn	Leu	Ser	Leu	Pro	Asn	Asp	Thr	Ile	Ile	Ala	Lys				
65					70					75					80				
Gly	Glu	Asp	Leu	Thr	Leu	Lys	Pro	Thr	Leu	Asn	Leu	Ile	Asn	Pro	Lys				
				85					90					95					
Ile	Tyr	Ser	Trp	Lys	Ile	Asp	Gly	Lys	Glu	Val	Ser	Asn	Glu	Val	Asn				
			100					105					110						
Tyr	Thr	Phe	Ser	Thr	Ser	Val	Gly	Gly	Lys	His	Glu	Ile	Ile	Phe	Glu				
		115					120					125							
Ala	Gln	Asp	Ser	Lys	Gly	Asn	Thr	Asp	Lys	Ala	Gln	Ile	Thr	Val	Asp				
	130					135					140								
Val	Phe	Ala	Tyr	Tyr	Gly	Gly	Phe	Tyr	Val	Ile	Asn	Glu	Gly	Trp	Ala				
145					150					155					160				
Gly	His	Asp	Pro	Ala	Ser	Val	Asn	Tyr	Tyr	Lys	Asp	Gly	Lys	Trp	Asn				
				165				170						175					
Phe	Asn	Ile	Val	Glu	Ser	Leu	Gly	Gln	Thr	Gly	Thr	Val	Gly	Val	Ile				
			180					185					190						
Gln	Asp	Ser	Tyr	Met	Tyr	Ile	Val	Ala	Lys	Asp	Ala	Pro	Tyr	Leu	Thr				
	195						200					205							
Gln	Ile	Glu	Leu	Ala	Asn	Phe	Asn	Ile	Thr	Lys	Gln	Leu	Ser	Thr	Glu				
	210				215						220								
Ile	Glu	Glu	Gln	Leu	Asp	Tyr	Gly	Gln	Ala	Asn	Ser	Phe	Cys	Thr	Ile				
225					230					235					240				
Asn	Glu	Thr	Thr	Gly	Ile	Leu	Thr	Ala	Ser	Arg	Gly	Ala	Tyr	Lys	Ile				
				245				250						255					
Asn	Leu	Asn	Pro	Leu	Ser	Ile	Gly	Asn	Met	Leu	Pro	Gln	Leu	Asn	Ser				
			260					265					270						
Glu	Ser	Ala	Asn	Gly	Asn	Gly	Cys	Lys	Asp	Ile	Leu	Lys	Ser	Gly	Asp				
		275				280						285							
Tyr	Val	Phe	Val	Asn	Asn	Met	Asp	Thr	Ile	Lys	Ile	Tyr	Lys	Ser	Ser				
	290				295						300								
Asp	Leu	Ser	Phe	Val	Lys	Lys	Leu	Thr	Ala	Leu	Met	Lys	Thr	Gly	Phe				
305					310				315						320				
Ala	Gln	Thr	Lys	Asp	Gly	Asn	Ile	Trp	Ala	Ala	Asn	Gly	Gln	Ser	Leu				
				325					330					335					
Ile	Lys	Ile	Asp	Pro	Lys	Thr	Leu	Asp	Glu	Thr	Thr	Val	Glu	Leu	Pro				
			340					345					350						
Asp	Asn	Ile	Asn	Val	Phe	Tyr	Asn	Gln	Trp	Ala	Tyr	Thr	Pro	Thr	Gly				
	355						360					365							
Leu	Cys	Ala	Ser	Thr	Thr	Glu	Asn	Ala	Leu	Tyr	Ile	Val	Asn	Thr	Thr				
	370					375					380								
Val	Val	Pro	Gly	Ala	Tyr	Gly	Asp	Ser	Tyr	Tyr	Gly	Lys	Asn	Ile	Tyr				
385					390					395					400				
Lys	Tyr	Asn	Thr	Glu	Ser	Lys	Ile	Ala	Gln	Glu	Phe	Phe	Lys	Ala	Pro				
				405				410						415					
Ser	Lys	Ile	Gln	Ser	Ile	Tyr	Gly	Ala	Gly	Ile	Gln	Val	Asn	Pro	Gln				
			420					425					430						
Asn	Gly	Asp	Val	Tyr	Leu	Ile	Tyr	Thr	Glu	Asp	Gly	Tyr	Gly	Ala	His				
	435					440						445							
Tyr	Leu	Asn	Thr	Asn	Ile	Tyr	Val	Ala	Asp	Gly	Gln	Ser	Gly	Thr	Gln				
	450				455					460									
Lys	Gln	Ile	Ile	Asp	Tyr	Thr	Gly	Lys	Tyr	Trp	Phe	Pro	Ser	Ser	Ile				
465					470				475						480				
Val	Phe	Lys																	

<211> 239  
 <212> PRT  
 <213> B.fragilis

<400> 8476

Leu Cys Ser Ile Thr Leu Thr Lys Asn Thr Met Asn Asp Tyr Arg Ile  
 1 5 10 15  
 Leu Val Val Asp Asp Glu Glu Asp Leu Cys Glu Ile Leu Lys Phe Asn  
 20 25 30  
 Leu Glu Asn Glu Gly Tyr Glu Val Asp Thr Ala Asn Ser Ala Glu Glu  
 35 40 45  
 Ala Leu Lys Met Asn Ile Ser Ser Tyr His Leu Leu Leu Asp Val  
 50 55 60  
 Met Met Gly Glu Ile Ser Gly Phe Lys Met Ala Asn Leu Leu Lys Lys  
 65 70 75 80  
 Asp Lys Lys Thr Ala Gln Val Pro Ile Ile Phe Ile Thr Ala Lys Asp  
 85 90 95  
 Thr Glu Asn Asp Thr Val Thr Gly Phe Asn Leu Gly Ala Asp Asp Tyr  
 100 105 110  
 Ile Ser Lys Pro Phe Ser Leu Arg Glu Val Ile Ala Arg Val Lys Ala  
 115 120 125  
 Val Leu Arg Arg Thr Ala Thr Ser Asp Thr Glu Lys Ala Pro Glu Gln  
 130 135 140  
 Leu Cys Tyr Gln Ser Leu Val Ile Asp Ile Thr Lys Lys Lys Val Ser  
 145 150 155 160  
 Ile Asp Gly Glu Glu Val Pro Leu Thr Lys Lys Glu Phe Glu Ile Leu  
 165 170 175  
 Phe Leu Leu Leu Gln Asn Lys Gly Arg Val Phe Ser Arg Glu Asp Ile  
 180 185 190  
 Leu Ser Arg Ile Trp Ser Asp Glu Val Tyr Val Leu Asp Arg Thr Ile  
 195 200 205  
 Asp Val Asn Ile Thr Arg Leu Arg Lys Lys Ile Gly Thr Tyr Gly Lys  
 210 215 220  
 Arg Ile Val Thr Arg Leu Gly Tyr Gly Tyr Cys Phe Glu Thr Glu  
 225 230 235

<210> 8477  
 <211> 400  
 <212> PRT  
 <213> B.fragilis

<400> 8477

Asn Ile Lys Met Ile Lys Ile Asp Phe Lys Gln Arg Lys Arg Glu Val  
 1 5 10 15  
 Leu Trp Thr Val Val Ala Leu Phe Phe Ile Ala Ile Gly Val Ser Val  
 20 25 30  
 Phe Lys Phe Ser Ser Ala Thr Ser Gly Phe Glu Ile Thr Asp Glu Leu  
 35 40 45  
 Gly Gly Asn Ile Phe Pro Ser Ala Ile Leu Ser Val Ala Thr Thr Asp  
 50 55 60  
 Ala Gln Val Ile Gln Pro Ala Asp Ser Ile Tyr Leu Gly Asn Pro Lys  
 65 70 75 80  
 Ser Cys Ile Ala Ile Lys Val Lys Ser Arg Ser Ala Tyr Ser Arg Val  
 85 90 95  
 Arg Ile Asp Val Ala Glu Thr Pro Phe Ser Arg Ser Val Ser Glu  
 100 105 110  
 Phe Val Leu Asn Lys Pro Arg Thr Glu Tyr Thr Ile Tyr Pro Asp Ile  
 115 120 125  
 Ile Trp Asn Tyr Glu Ala Leu Lys Asn Asn Asn Gln Ala Glu Pro Ile

130 135 140  
 Ser Val Ala Val Thr Val Glu Met Asn Gly Glu Asp Leu Gly Gln Arg  
 145 150 155 160  
 Val Arg Thr Phe Ser Val Arg Ser Val Asn Glu Cys Leu Leu Gly Tyr  
 165 170 175  
 Val Thr Asn Gly Thr Lys Phe His Asp Thr Gly Ile Phe Phe Ala Ala  
 180 185 190  
 Tyr Val Asn Glu Glu Asn Pro Met Ile Asp Gln Leu Leu Arg Glu Ala  
 195 200 205  
 Leu Asn Thr Arg Ile Val Asn Arg Phe Leu Gly Tyr Gln Asn Pro Ala  
 210 215 220  
 Pro Gly Ala Val Asp Lys Gln Val Tyr Ala Leu Trp Asn Val Leu Gln  
 225 230 235 240  
 Lys Arg Lys Phe Arg Tyr Ser Ser Val Ser Asn Thr Ser Leu Ser Ser  
 245 250 255  
 Asn Val Val Tyr Ser Gln Arg Val Arg Thr Phe Asp Asp Ala Leu Glu  
 260 265 270  
 Ser Ser Gln Ile Asn Cys Val Asp Gly Ser Val Leu Phe Ala Ser Leu  
 275 280 285  
 Leu Arg Ala Ile Asn Ile Glu Pro Ile Leu Val Arg Thr Pro Gly His  
 290 295 300  
 Met Phe Val Gly Tyr Tyr Thr Asp Asn Ser His Lys Asp Met Asn Phe  
 305 310 315 320  
 Leu Glu Thr Thr Met Ile Gly Asp Val Asp Leu Asp Asp Phe Phe Pro  
 325 330 335  
 Asp Glu Gln Leu Asp Ser Thr Met Val Gly Lys Ser Gln Asn Gln Met  
 340 345 350  
 Ser Leu Leu Thr Phe Glu Lys Ser Lys Gln Tyr Ala Asn Lys Lys Tyr  
 355 360 365  
 Lys Glu Asn Glu Lys Gly Ile His Ser Gly Lys Leu Asn Tyr Met Phe  
 370 375 380  
 Leu Glu Ile Ser Lys Asp Val Arg Arg Lys Ile Gln Pro Ile Gly Lys  
 385 390 395 400

&lt;210&gt; 8478

&lt;211&gt; 270

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8478

Arg Asn Arg Ile Met Asn Leu Thr Asn Tyr His Ser His Thr Leu Tyr  
 1 5 10 15  
 Cys Asp Gly Arg Ala Gly Met Glu Asp Phe Ile Arg Phe Ala Ile Ser  
 20 25 30  
 Arg Gly Phe Thr Ser Tyr Gly Ile Ser Ser His Ala Pro Leu Pro Phe  
 35 40 45  
 Pro Thr His Trp Thr Met Glu Trp Asp Arg Met Asp Asp Tyr Leu Asp  
 50 55 60  
 Glu Phe Thr Arg Met Lys Glu Lys Tyr Ala Ser Glu Ile Glu Leu Ala  
 65 70 75 80  
 Val Gly Leu Glu Ile Asp Tyr Leu Asn Glu Asp Ser Asn Pro Ser Val  
 85 90 95  
 Arg Arg Phe Gln Glu Leu Pro Leu Asp Tyr Arg Ile Gly Ser Val His  
 100 105 110  
 Leu Leu Tyr Asn Asp Arg Asp Glu Val Val Asp Ile Asp Val Cys Ala  
 115 120 125  
 Glu Val Phe Arg Asp Ile Val Asp Gln His Phe Gly Gly Asp Leu Asp  
 130 135 140  
 Arg Val Ile His Leu Tyr Tyr Asp Arg Leu Leu Arg Met Val Glu Leu

145 150 155 160  
 Gly Gly Phe Asp Ile Leu Gly His Ala Asp Lys Met His His Asn Ala  
 165 170 175  
 Ala Cys Tyr Arg Pro Gly Leu Leu Asp Glu Ser Trp Tyr Asp Ala Leu  
 180 185 190  
 Ile His Asp Tyr Phe Ser Ala Val Ala Ala Lys Gly Tyr Ile Val Glu  
 195 200 205  
 Ile Asn Thr Lys Ala Leu His His Leu Asn Thr Phe Phe Pro Asn Glu  
 210 215 220  
 Arg Tyr Phe Pro Leu Leu Lys Glu Leu Gly Val Arg Val Gln Val Asn  
 225 230 235 240  
 Ser Asp Ser His Tyr Pro Glu Arg Ile Asn Ser Gly Arg Pro Glu Ala  
 245 250 255  
 Val Phe Ser Thr Ala Arg Lys Asp Gln Arg Arg Cys Arg Glu  
 260 265 270

<210> 8479

<211> 472

<212> PRT

<213> B.fragilis

<400> 8479

Tyr Phe Tyr Ser Ile Phe Val Leu Ser His Glu Asn Val Arg His Thr  
 1 5 10 15  
 Thr Ser Lys Leu Asn Met Glu Asn Lys Lys Gly Gln Pro Thr Thr Glu  
 20 25 30  
 Ala Ile Phe Arg Gly Ile Gln Ser Gly Lys Val Leu Glu Leu Phe Asp  
 35 40 45  
 Lys Leu Gln Tyr Gln Ile Ala Ile His Gly Asp Leu Thr Tyr Ser Asp  
 50 55 60  
 Pro Trp Gly Glu Val His Arg Phe Arg Asp Gln Phe Glu Ser Ala Lys  
 65 70 75 80  
 Arg Asp Ser Asp Ser Pro Thr Ala Ile Gly Arg Tyr Pro Phe Ala Asp  
 85 90 95  
 Val Trp Ile Gln Phe Tyr Glu Met Glu Val Lys Asp Tyr Ser Leu Leu  
 100 105 110  
 Leu Glu Met Cys Leu Met Ala Ser His Ser Arg Thr Ser Val Trp Arg  
 115 120 125  
 Lys Gly Phe Gly Thr Leu Leu Asp Lys Leu Tyr Gly Lys Ile Pro Leu  
 130 135 140  
 Val Glu Tyr Glu Gln Ala Leu Glu His Leu Glu His Pro Tyr Ala Leu  
 145 150 155 160  
 Ser Glu Ile Leu Trp Ala Leu Glu Trp Asp Tyr Arg Asp Gln Glu Val  
 165 170 175  
 Tyr Leu Lys Phe Ser His Tyr Ile Leu Leu His Leu Leu Pro Leu Leu  
 180 185 190  
 Thr Pro Arg Asn Ile Thr Phe Leu Tyr Ser Val Arg Glu Trp Phe Gly  
 195 200 205  
 Ser Thr Ser Asp His Arg Val Leu Val His Cys Tyr Trp Ile Asp  
 210 215 220  
 Cys Trp Leu Lys His Pro Lys Arg Leu Leu Thr Asp Asp Glu Phe Thr  
 225 230 235 240  
 Ala Asp Phe Lys Ile Arg Tyr Glu Leu Tyr Arg Leu Cys Asn Phe Leu  
 245 250 255  
 Ser Tyr Lys Glu Glu Pro Tyr Pro Leu Glu Phe Pro Ile Arg Ala Val  
 260 265 270  
 Asp Phe Gly Arg Ala Cys Gln Met Gly Leu Leu Ser Glu Asp Thr Leu  
 275 280 285  
 Met Val Glu Leu Met Asp Arg Pro Leu Ser Pro Val Leu Ile Glu Glu

290 295 300  
 Ala Val Asp Phe Phe Tyr Lys Lys Asp Gln Lys Glu Lys Arg Leu Tyr  
 305 310 315 320  
 Thr Asp Cys Arg Asp Tyr Asp Phe Ser Arg Phe Lys Lys Val Leu Glu  
 325 330 335  
 Lys Val Thr Glu Arg Ile Leu Asp Ile Glu Leu Glu Arg Gly Glu Ala  
 340 345 350  
 Cys Thr Asp Val Thr Ser Leu Ala Arg Lys Leu Asp Gly Val Thr Gly  
 355 360 365  
 Ala Glu Leu Met Ile Arg Leu Leu Ser Leu Met Gly Lys Glu Lys Phe  
 370 375 380  
 Ile Arg Leu Asp Lys Trp Tyr Tyr Asp Thr Gly Glu Ser Arg Thr Gly  
 385 390 395 400  
 Met Phe Cys His Leu Met Leu His Cys Ala Pro Ser Pro Thr Asp Thr  
 405 410 415  
 Pro Asp Trp Leu Lys Met Leu Val Glu Arg Ala Gly Ile Thr Pro Lys  
 420 425 430  
 Arg Leu Val Glu Met Ala Val Tyr Ser Pro Pro Leu Ala Gly Asp Gly  
 435 440 445  
 Arg Arg Gly Tyr Arg Met Glu Arg Pro Asp Leu Cys Gly Lys Phe Val  
 450 455 460  
 Leu Cys Leu His Lys Gly Val Leu  
 465 470

<210> 8480

<211> 409

<212> PRT

<213> B.fragilis

<400> 8480

Pro Gln Asn Ser Tyr Phe Met Ser Ser Thr Gln Lys Asn Phe Ala Leu  
 1 5 10 15  
 Pro Leu Ala Phe Ile Gly Ile Met Phe Phe Ala Ile Gly Phe Ala Leu  
 20 25 30  
 Gly Ile Asn Ser Val Leu Ile Pro Val Leu Gln Gly Ser Leu Gly Ile  
 35 40 45  
 Thr Ser Ala Glu Ser Tyr Leu Ile Ile Ala Ala Thr Phe Val Pro Phe  
 50 55 60  
 Leu Ile Phe Gly Tyr Pro Ala Ser Met Thr Ile Lys Ala Ile Gly Tyr  
 65 70 75 80  
 Lys His Thr Met Ala Leu Ser Phe Ala Met Phe Ala Val Ala Phe Gly  
 85 90 95  
 Leu Tyr Ile Pro Ser Ala Ser Gln Glu Ser Phe Pro Leu Phe Leu Val  
 100 105 110  
 Ala Ser Phe Val Ser Gly Thr Ala Asn Ala Phe Leu Gln Ala Ser Val  
 115 120 125  
 Asn Pro Tyr Ile Thr Ile Leu Gly Pro Leu Asp Ser Ala Ala Lys Arg  
 130 135 140  
 Ile Ser Ile Met Gly Ile Cys Asn Lys Leu Ala Trp Pro Ile Pro Pro  
 145 150 155 160  
 Leu Phe Leu Ala Phe Leu Ile Gly Lys Glu Val Ser Asp Ile Thr Val  
 165 170 175  
 Ser Asp Leu Phe Thr Pro Phe Tyr Val Ile Ile Ala Ala Phe Ile Ile  
 180 185 190  
 Leu Gly Ile Ile Ser Leu Met Ala Pro Leu Pro Glu Val Lys Ala Ala  
 195 200 205  
 Gly Glu Asp Asp Ser Glu Gly Gly Ala Glu Ala Cys Pro Tyr Ala Ala  
 210 215 220  
 Ser Lys Thr Ser Val Trp Gln Phe Pro His Leu Leu Leu Gly Cys Leu

225                      230                      235                      240  
 Ala Leu Phe Leu Tyr Val Gly Val Glu Thr Val Ser Leu Gly Thr Leu  
                                  245                      250                      255  
 Val Asp Tyr Ala Asn Ser Leu His Leu Glu Asn Ala Ala Ala Tyr Ala  
                                  260                      265                      270  
 Trp Ile Ala Pro Ile Gly Ile Val Ile Gly Tyr Ile Cys Gly Ile Ile  
                                  275                      280                      285  
 Phe Ile Pro Lys Tyr Ile Asn Gln Ala Thr Ala Leu Lys Ile Cys Ser  
                                  290                      295                      300  
 Ile Leu Ala Ile Ala Gly Ser Ile Leu Val Val Leu Thr Pro Ala Asp  
 305                                   310                      315                      320  
 Ile Ser Ile Tyr Phe Ile Ala Phe Ile Ala Leu Gly Cys Ser Leu Met  
                                  325                      330                      335  
 Trp Pro Ala Leu Trp Pro Leu Ala Met Ala Asp Leu Gly Lys Phe Thr  
                                  340                      345                      350  
 Lys Ala Gly Ser Ser Leu Leu Ile Met Ala Met Ala Gly Gly Ala Val  
                                  355                      360                      365  
 Ile Pro Thr Leu Phe Gly Tyr Ile Lys Asp Ile Ala Gly Ala Gln Asn  
                                  370                      375                      380  
 Ala Tyr Trp Ile Cys Leu Pro Cys Phe Leu Phe Ile Leu Tyr Tyr Gly  
 385                                   390                      395                      400  
 Met Ala Gly Tyr Lys Ile Arg Thr Lys  
                                  405

<210> 8481

<211> 301

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222>

(31), (32), (33), (34), (35), (36), (37), (38), (39), (40), (41), (42), (43), (44), (45), (46),  
 (47), (48), (49), (50), (51), (52), (53), (54), (55), (57), (58), (59), (60), (63), (66), (68),  
 (80), (92), (107), (116), (121), (131), (147), (166), (171), (184), (212), (252), (293)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8481

Ala Tyr Thr Phe Ile Phe Lys Val Ser Tyr Arg Phe Leu Cys Thr Leu  
 1                                      5                                      10                                      15  
 Cys Thr Gly Ser Ile Asp Phe Arg Ser Ala Asp Met Gly Val Xaa Xaa  
                                  20                                      25                                      30  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
                                  35                                      40                                      45  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Leu Pro Xaa Pro  
                                  50                                      55                                      60  
 Phe Xaa Leu Xaa Leu Pro Pro Leu Leu Phe Leu Ser Ser Phe Ser Xaa  
 65                                      70                                      75                                      80  
 Leu Phe Phe Phe Phe Pro Phe Pro Pro Phe Phe Xaa Leu Phe Phe Phe  
                                  85                                      90                                      95  
 Leu Pro Phe Pro Leu Ser Ser Pro Phe Phe Xaa Pro Phe Pro Phe Leu  
                                  100                                      105                                      110  
 Phe Leu Phe Xaa Pro Phe Phe Pro Xaa Pro Leu Leu Phe Ser Phe Phe  
                                  115                                      120                                      125  
 Pro Phe Xaa Ser Leu Pro Ser Phe Leu Ser Ser Pro Phe Ser Pro Tyr  
                                  130                                      135                                      140  
 Pro Ser Xaa Phe Phe Leu Phe Leu Phe Pro Pro Leu Phe Pro Ser Pro  
 145                                      150                                      155                                      160  
 Ser Pro Ser Leu Pro Xaa Phe Leu Leu Pro Xaa Ser Pro Phe Phe Pro



165 170 175  
 Phe Phe Pro Phe Leu Pro Phe Xaa Ser Ser Phe Phe Phe Phe Pro Phe  
 180 185 190  
 Phe Pro Leu Phe Leu Phe Phe Leu Ser Pro Phe Pro Phe Phe Phe Ser  
 195 200 205  
 Phe Ser Leu Xaa Phe Pro Phe Phe Pro Leu Leu Phe Phe Ser Leu Pro  
 210 215 220  
 Phe Leu Phe Leu Leu Leu Phe Ser Ser Phe Leu Ser Ser Phe Phe Phe  
 225 230 235 240  
 Pro Pro Phe Pro Phe Pro Leu Pro Pro Leu Leu Xaa Leu Phe Leu Pro  
 245 250 255  
 Leu Phe Ser Phe Ser Phe Ser Leu Phe Phe Leu Ser Ser Leu Ser Phe  
 260 265 270  
 Phe Leu Ser Phe Pro Phe Ser Leu Leu Leu Ser Ser Ser Phe Ser Phe  
 275 280 285  
 Leu Ser Phe Ser Xaa Leu Phe Phe Phe Pro Ser Leu Pro  
 290 295 300

&lt;210&gt; 8482

&lt;211&gt; 254

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8482

Thr Leu Leu Pro Asp Ser Leu Asp Ile Gly Arg Gln Ser Thr Gln Ile  
 1 5 10 15  
 Thr Phe Ile Glu Ile Lys Asn Ser Leu Ser Leu Pro Lys Ile Pro Gln  
 20 25 30  
 Met Lys Tyr Thr Val Tyr Leu Phe Asp Phe Asp Tyr Thr Leu Ala Asp  
 35 40 45  
 Ser Ser Arg Gly Ile Val Thr Cys Phe Arg Ser Val Leu Glu Arg His  
 50 55 60  
 Gly Tyr Thr Gly Ile Thr Asp Asp Met Ile Lys Arg Thr Ile Gly Lys  
 65 70 75 80  
 Thr Leu Glu Glu Ser Phe Ser Ile Leu Thr Gly Ile Thr Asp Ala Asp  
 85 90 95  
 Gln Leu Glu Ser Phe Arg Gln Glu Tyr Ser Lys Glu Ala Asp Ile Tyr  
 100 105 110  
 Met Asn Ala Asn Thr Ile Leu Phe Pro Asp Thr Leu Pro Thr Leu Thr  
 115 120 125  
 His Leu Lys Lys Gln Gly Ile Arg Ile Gly Ile Ile Ser Thr Lys Tyr  
 130 135 140  
 Arg Phe Arg Ile Leu Ser Phe Leu Arg Asn His Met Pro Asp Asp Trp  
 145 150 155 160  
 Phe Asp Ile Ile Ile Gly Gly Glu Asp Val Thr His His Lys Pro Asp  
 165 170 175  
 Pro Glu Gly Leu Leu Leu Ala Ile Asp Arg Leu Lys Ala Cys Pro Glu  
 180 185 190  
 Glu Val Leu Tyr Ile Gly Asp Ser Thr Val Asp Ala Gly Thr Ala Ala  
 195 200 205  
 Ala Ala Gly Val Ser Phe Thr Gly Val Thr Ser Gly Met Thr Thr Ala  
 210 215 220  
 Gln Glu Phe Gln Ala Tyr Pro Tyr Asp Arg Ile Ile Ser Thr Leu Gly  
 225 230 235 240  
 Gln Leu Ile Ser Val Pro Glu Asp Lys Ser Gly Cys Pro Leu  
 245 250

&lt;210&gt; 8483

&lt;211&gt; 144

<212> PRT  
<213> B.fragilis

<400> 8483

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Lys Tyr Met Pro Ile Asn Tyr Val Val Arg Lys Lys Lys Asp Gln Ser
1           5           10           15
Gly Asn Glu Val Lys Glu Leu Tyr Tyr Ala Val Pro Ser Ala Ile Gln
          20           25           30
Asn Lys Gly Val Ser Glu Lys Gln Leu Ala Glu Asp Leu His Asp Asn
          35           40           45
Ser Ser Leu Ser Ala Gly Asp Val Leu Ser Val Leu Glu Gln Leu Pro
          50           55           60
Lys Ala Ile Ala Arg His Met Lys Glu Gly Arg Thr Val Thr Ile Arg
65           70           75           80
Gly Leu Gly Thr Phe Tyr Pro Ala Leu Ser Ser Glu Gly Cys Glu Thr
          85           90           95
Pro Glu Glu Cys Thr Pro Asn Lys Val Arg Leu Thr Arg Ile Cys Phe
          100          105          110
Arg Ala Asp Thr Ala Phe Thr Tyr Asp Val Lys His Cys Glu Phe Glu
          115          120          125
Ser Met Gln Leu Arg Phe Thr Lys Arg Pro Lys Pro Gly Lys Glu Glu
          130          135          140

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<210> 8484  
<211> 140  
<212> PRT  
<213> B.fragilis

<400> 8484

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Trp Arg Trp Pro Val Asn Thr Gly Trp Phe Ile Arg Asp Met Pro Met
1           5           10           15
Ile Leu Pro Phe Arg Val Ile Ile Cys Arg Lys Met Lys Phe Trp Tyr
          20           25           30
Glu Ser Thr Gly Leu Phe Gly Lys Lys Gly Phe Thr Met Asn Val Lys
          35           40           45
Lys Thr Arg Phe Leu Ser Glu His Lys Arg Lys Ile Ile Thr Gly Val
          50           55           60
Ser Val Ser Ser Gly Lys Lys Met Thr Leu Pro Lys Val Lys Lys Arg
65           70           75           80
Glu Ile Arg Lys Asn Val His Tyr Val Leu Thr Lys Gly Leu Val Gly
          85           90           95
His Gln Glu His Ile Gly Ser Thr Asp Pro Val Tyr Leu Lys Arg Leu
          100          105          110
Leu Gly Ser Leu Cys Tyr Trp Arg Ser Ile Glu Pro Asp Asn Arg Tyr
          115          120          125
Val Ser Asp Ser Ile Thr Ala Leu Lys Arg Leu Met
          130          135          140

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<210> 8485  
<211> 187  
<212> PRT  
<213> B.fragilis

<400> 8485

```

Phe Glu Tyr Thr Ala Ile Asp Pro Pro Val Lys Thr Ile Gly Ser Ile
1           5           10           15
Pro Ile Ile Ile Asn Leu Lys Glu Lys Gly Lys Asp Val Asn Ala Thr
          20           25           30
Lys Ala Thr Val Ile Ser Phe Ala Leu Met Ile Gly Phe Phe Tyr Ala

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35 40 45  
 Gly Asp Phe Met Leu Lys Leu Phe His Val Asp Ile Glu Ser Phe Ala  
 50 55 60  
 Val Ala Gly Ala Phe Val Ile Phe Leu Met Ser Leu Glu Met Ile Leu  
 65 70 75 80  
 Asp Val Glu Ile Phe Lys Asn Gln Gly Pro Ile Lys Glu Ala Thr Leu  
 85 90 95  
 Val Pro Leu Val Phe Pro Leu Leu Ala Gly Ala Gly Ala Phe Thr Thr  
 100 105 110  
 Leu Leu Ser Leu Arg Ala Glu Tyr Ala Ser Ile Asn Ile Val Ile Ala  
 115 120 125  
 Leu Ile Leu Asn Met Leu Trp Val Tyr Phe Val Val Ser Met Thr Gly  
 130 135 140  
 Arg Val Glu Arg Phe Leu Gly Lys Gly Gly Ile Tyr Ile Ile Arg Lys  
 145 150 155 160  
 Phe Phe Gly Ile Ile Leu Leu Ala Ile Ser Val Arg Leu Phe Thr Ala  
 165 170 175  
 Asn Ile Thr Leu Leu Ile Ala Ala Leu Gln Lys  
 180 185

<210> 8486

<211> 430

<212> PRT

<213> B.fragilis

<400> 8486

Thr Gly Thr Thr Gly Asn Thr Ser Ile Lys Val Met Asn Ile Lys Asn  
 1 5 10 15  
 Arg Leu Ile Ile Met Asn Phe Leu Gln Phe Phe Val Trp Gly Ser Trp  
 20 25 30  
 Leu Ile Ser Leu Gly Gly Tyr Met Glu Arg Gly Leu His Phe Glu Gly  
 35 40 45  
 Gly Gln Ile Gly Ala Ile Phe Ala Thr Met Gly Ile Ala Ser Ile Ile  
 50 55 60  
 Met Pro Gly Ile Thr Gly Ile Ile Ala Asp Lys Trp Phe Asn Ala Glu  
 65 70 75 80  
 Arg Leu Tyr Gly Ile Cys His Leu Leu Gly Ala Gly Cys Leu Phe Tyr  
 85 90 95  
 Ala Ser Thr Ala Thr Asp Tyr Asn Gln Met Tyr Trp Ala Met Leu Leu  
 100 105 110  
 Asn Leu Met Val Tyr Met Pro Thr Leu Ser Leu Ala Asn Thr Val Ser  
 115 120 125  
 Tyr Asn Ala Leu Glu Gln Tyr Lys Cys Asp Leu Val Lys Asp Phe Pro  
 130 135 140  
 Pro Ile Arg Val Trp Gly Thr Ile Gly Phe Ile Cys Ala Met Trp Ala  
 145 150 155 160  
 Val Asp Leu Thr Gly Phe Lys Asn Ser Ser Ala Gln Leu Tyr Val Gly  
 165 170 175  
 Ala Ser Ser Ala Leu Leu Leu Gly Leu Tyr Ser Phe Thr Leu Pro Pro  
 180 185 190  
 Cys Pro Pro Ala Lys Asn Gln Ser Lys Thr Leu Leu Ser Ser Phe Gly  
 195 200 205  
 Leu Asp Ala Leu Ser Leu Phe Lys Arg Lys Lys Met Ala Ile Phe Phe  
 210 215 220  
 Phe Phe Ser Met Leu Leu Gly Ala Ala Leu Gln Ile Thr Asn Thr Tyr  
 225 230 235 240  
 Gly Asp Ala Phe Leu Gly Ser Phe Ala Lys Ile Pro Glu Phe Ala Asp  
 245 250 255  
 Ser Phe Gly Val Lys His Ser Val Ile Leu Leu Ser Ile Ser Gln Met

	260		265		270										
Ser	Glu	Thr	Leu	Phe	Ile	Leu	Ala	Ile	Pro	Phe	Phe	Leu	Lys	His	Phe
	275						280					285			
Gly	Ile	Lys	Arg	Val	Met	Leu	Ile	Ser	Met	Phe	Ala	Trp	Val	Phe	Arg
	290					295					300				
Phe	Gly	Leu	Phe	Gly	Phe	Gly	Asp	Pro	Gly	Ser	Gly	Ile	Trp	Met	Leu
305					310					315					320
Ile	Leu	Ser	Met	Ile	Val	Tyr	Gly	Met	Ala	Phe	Asp	Phe	Phe	Asn	Ile
			325					330						335	
Ser	Gly	Ser	Leu	Phe	Val	Glu	Leu	Glu	Thr	Lys	Pro	Glu	Thr	Arg	Ala
			340					345					350		
Ser	Ala	Gln	Gly	Leu	Phe	Phe	Ile	Met	Thr	Asn	Gly	Leu	Gly	Ala	Val
		355					360					365			
Ile	Gly	Gly	Tyr	Ala	Ser	Gly	Ala	Val	Val	Asp	Ala	Phe	Ser	Val	Tyr
	370					375				380					
Glu	Asn	Gly	Met	Leu	Ala	Ser	Arg	Asn	Trp	Pro	Ala	Ile	Trp	Phe	Ile
385					390					395					400
Phe	Ala	Ala	Tyr	Ala	Leu	Ala	Ile	Gly	Ile	Leu	Phe	Ala	Ile	Val	Phe
			405					410						415	
Arg	Tyr	Lys	His	Gln	Pro	Gly	Glu	Leu	Lys	Lys	Val	Asn	Asn		
		420						425					430		

&lt;210&gt; 8487

&lt;211&gt; 239

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8487

His	Ser	Phe	Ala	Thr	Asp	Met	Val	Lys	Met	Asn	Leu	Ser	Glu	Ile	Asn
1				5					10					15	
Val	Pro	Glu	Arg	Ile	Ala	Glu	Met	Trp	Ala	Pro	Leu	Asn	Ala	Glu	Gln
			20					25					30		
Arg	Glu	Phe	Leu	Ala	Asn	Asn	Phe	Thr	Leu	Gln	Asn	Tyr	Lys	Lys	Asn
		35					40					45			
Glu	Thr	Ile	Tyr	Cys	Glu	Gly	Glu	Ser	Pro	Thr	Tyr	Leu	Met	Cys	Leu
	50					55					60				
Leu	Ser	Gly	Lys	Val	Lys	Ile	Tyr	Lys	Asp	Gly	Val	Gly	Gly	Arg	Ser
65					70					75					80
Gln	Ile	Ile	Arg	Met	Ile	Lys	Pro	Thr	Glu	Tyr	Phe	Gly	Tyr	Arg	Ala
				85					90					95	
Tyr	Phe	Ala	Lys	Glu	Asp	Tyr	Val	Thr	Ala	Ala	Ser	Ala	Phe	Glu	Pro
			100					105					110		
Ser	Thr	Ile	Cys	Leu	Ile	Pro	Met	Ser	Ala	Ile	Met	Thr	Leu	Val	Ser
		115					120					125			
Gln	Asn	Asn	Asp	Leu	Gly	Met	Phe	Phe	Ile	Arg	Gln	Leu	Ser	Ile	Asp
	130					135					140				
Leu	Gly	Ile	Ala	Asp	Glu	Arg	Thr	Val	Asn	Leu	Thr	Gln	Lys	His	Ile
145					150					155					160
Arg	Gly	Arg	Leu	Ala	Glu	Ser	Leu	Leu	Phe	Leu	Lys	Glu	Ser	Tyr	Gly
			165						170					175	
Leu	Glu	Glu	Asp	Gly	Ser	Thr	Leu	Ser	Ile	Tyr	Leu	Ser	Arg	Glu	Asp
		180						185					190		
Leu	Ala	Asn	Leu	Ser	Asn	Met	Thr	Thr	Ser	Asn	Ala	Ile	Arg	Thr	Leu
		195					200					205			
Ser	Asn	Phe	Ala	Thr	Glu	Arg	Leu	Ile	Thr	Ile	Asp	Gly	Arg	Lys	Ile
	210					215					220				
Lys	Ile	Ile	Asp	Glu	Glu	Lys	Leu	Lys	Lys	Ile	Ser	Lys	Ile	Gly	
225					230					235					

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<210> 8488  
 <211> 251  
 <212> PRT  
 <213> B.fragilis

<400> 8488

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Pro Val Leu Ala Ser Ser Lys Ala Lys Arg Trp Leu Cys Glu Leu Pro
1          5          10          15
Glu Lys Ile Val Asn Ile Thr Asp Lys Leu Gly Ile Pro Tyr Val Phe
          20          25          30
Lys Gly Ser Tyr Arg Lys Ala Asn Arg Ser Arg Leu Asp Ser Phe Met
          35          40          45
Gly Ile Gly Asp Glu Lys Ala Leu Lys Val Leu Glu Lys Val His Asn
          50          55          60
Thr Phe Gly Val Pro Thr Val Thr Asp Ile His Ala Ala Asp Glu Ala
65          70          75          80
Ala Met Ala Ala Asp Tyr Val Asp Ile Leu Gln Ile Pro Ala Phe Leu
          85          90          95
Cys Arg Gln Thr Asp Leu Leu Val Ala Ala Ala Gln Thr Gly Lys Thr
          100          105          110
Ile Asn Ile Lys Lys Gly Gln Phe Leu Ser Pro Leu Ala Met Gln Phe
          115          120          125
Ala Ala Asp Lys Val Ile Glu Ala Gly Asn Lys Asn Val Met Leu Thr
          130          135          140
Glu Arg Gly Thr Thr Phe Gly Tyr Gln Asp Leu Val Ile Asp Tyr Arg
145          150          155          160
Gly Ile Pro Glu Met Gln Ser Phe Gly Tyr Pro Val Ile Leu Asp Val
          165          170          175
Thr His Ser Leu Gln Gln Pro Asn Gln Thr Asn Gly Val Thr Gly Gly
          180          185          190
Met Pro Gln Leu Ile Glu Thr Val Ala Lys Ala Gly Ile Ala Val Gly
          195          200          205
Ala Asp Gly Leu Phe Ile Glu Thr His Glu Asn Pro Ala Val Ala Lys
          210          215          220
Ser Asp Gly Ala Asn Met Leu Lys Leu Asp Arg Leu Glu Gly Leu Leu
225          230          235          240
Thr Lys Leu Val Lys Ile Arg Glu Ala Ile Met
          245          250

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<210> 8489  
 <211> 328  
 <212> PRT  
 <213> B.fragilis

<400> 8489

```

Glu Phe Asn Ala Cys Phe Ser Leu Pro Phe Ser Tyr Leu Cys Asn Val
1          5          10          15
Ile Asn Lys Asp Met Thr Met Pro Asp Tyr Asp Leu Ile Ala Ile Leu
          20          25          30
Gly Pro Thr Ala Ser Gly Lys Thr Pro Phe Ala Ala Ala Leu Ala Ala
          35          40          45
Glu Leu Asn Thr Glu Ile Ile Ser Ala Asp Ser Arg Gln Ile Tyr Arg
          50          55          60
Gly Met Asp Leu Gly Thr Gly Lys Asp Leu Glu Asp Tyr Thr Ile Asn
65          70          75          80
Gly Arg Gln Ile Pro Tyr His Leu Ile Asp Ile Ala Asp Pro Gly Tyr
          85          90          95
Lys Tyr Asn Val Phe Glu Tyr Gln Arg Asp Phe Leu Thr Ala Tyr Glu
          100          105          110

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Thr Ile Lys Gln Lys Gly Cys Leu Pro Val Leu Cys Gly Gly Thr Gly  
 115 120 125  
 Leu Tyr Leu Glu Ser Val Leu Lys Gly Tyr Arg Leu Ile Pro Val Pro  
 130 135 140  
 Glu Asn Gln Glu Leu Arg Val Arg Leu Ala Glu Lys Ser Leu Glu Glu  
 145 150 155 160  
 Leu Thr Ala Ile Leu Ser Ser Tyr Lys Thr Leu His Asn Ser Thr Asp  
 165 170 175  
 Val Asp Thr Val Lys Arg Ala Ile Arg Ala Ile Glu Ile Glu Glu Tyr  
 180 185 190  
 Tyr Ala Lys Thr Pro Ile Glu Glu Arg Glu Phe Pro Gln Leu Asn Ser  
 195 200 205  
 Leu Ile Ile Gly Val Asp Ile Asp Arg Glu Leu Arg Arg Glu Lys Ile  
 210 215 220  
 Thr Arg Arg Leu Lys Gln Arg Leu Asp Asp Gly Met Val Glu Glu Val  
 225 230 235 240  
 Arg Arg Leu Leu Ala Glu Gly Ile Gln Pro Asp Asp Leu Ile Tyr Tyr  
 245 250 255  
 Gly Leu Glu Tyr Lys Tyr Leu Thr Leu Tyr Ala Ile Gly Lys Met Thr  
 260 265 270  
 Tyr Asp Glu Met Phe Thr Gly Leu Glu Thr Ala Ile His Gln Phe Ala  
 275 280 285  
 Lys Arg Gln Met Thr Trp Phe Arg Gly Met Glu Arg Arg Gly Phe Thr  
 290 295 300  
 Ile His Trp Val Asp Ala Ser Leu Pro Met Glu Glu Lys Ile Asn Phe  
 305 310 315 320  
 Val Lys Gln Lys Leu Lys Glu Phe  
 325

&lt;210&gt; 8490

&lt;211&gt; 943

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8490

Asn Ser Ile Ala Met Lys His Leu Phe Arg Gly Leu Leu Leu Val Ala  
 1 5 10 15  
 Val Ile Leu Cys Cys Asn Phe Gln Gln Ala Phe Ala Gln Gln Met Pro  
 20 25 30  
 Pro Ile Pro Ile Asp Lys Asn Val Arg Ile Gly Lys Leu Asp Asn Gly  
 35 40 45  
 Leu Thr Tyr Tyr Ile Arg Lys Asn Asn Leu Pro Ala Asn Arg Ala Asp  
 50 55 60  
 Phe Tyr Ile Ala Gln Lys Val Gly Ser Ile Gln Glu Glu Glu Asn Gln  
 65 70 75 80  
 Arg Gly Leu Ala His Phe Leu Glu His Met Cys Phe Asn Gly Thr Thr  
 85 90 95  
 His Phe Pro Gly Asp Ala Leu Lys Gln Tyr Leu Glu Arg Ile Gly Val  
 100 105 110  
 Lys Phe Gly Glu Asn Leu Asn Ala Tyr Thr Ala Ile Asp Glu Thr Val  
 115 120 125  
 Tyr Asn Ile Ser Asn Val Pro Val Lys Thr Pro Gly Ala Val Asp Ser  
 130 135 140  
 Cys Leu Leu Ile Leu His Asp Trp Ser Asn Asp Leu Thr Leu Asp Pro  
 145 150 155 160  
 Lys Glu Ile Asp Lys Glu Arg Gly Val Ile Asn Glu Glu Trp Arg Thr  
 165 170 175  
 Arg Met Ser Ala Met Met Arg Met Gln Glu Lys Leu Leu Pro Met Met  
 180 185 190

Tyr Pro Gly Asp Lys Tyr Ala His Ser Phe Pro Ile Gly Thr Met Asp  
 195 200 205  
 Val Val Met Asn Phe Lys Pro Gln Thr Leu Arg Asp Tyr Tyr Glu Lys  
 210 215 220  
 Trp Tyr Arg Pro Asp Leu Gln Gly Ile Val Ile Val Gly Asp Ile Asp  
 225 230 235 240  
 Val Asp Ala Val Glu Ala Lys Ile Lys Thr Met Phe Ala Asp Ile Pro  
 245 250 255  
 Ala Gln Pro Asn Ala Ala Glu Arg Ile Tyr Tyr Pro Val Ala Asp Asn  
 260 265 270  
 Lys Glu Pro Ile Ile Cys Ile Leu Lys Asp Lys Glu Gln Pro His Val  
 275 280 285  
 Gln Val Leu Leu Phe Asn Lys His Glu Ala Val Pro Asp Asn Gln Lys  
 290 295 300  
 Gly Asn Val Asp Tyr Leu Ile Gln Gln Tyr Ala Lys Asn Leu Ile Ser  
 305 310 315 320  
 Ile Met Leu Asn Ala Arg Leu Asn Glu Leu Val Gln Thr Ala Asn Pro  
 325 330 335  
 Pro Tyr Ile Tyr Ala Gly Ala Asp Asp Ser Asn Phe Phe Val Ala Lys  
 340 345 350  
 Thr Lys Asp Ala Phe Leu Gly Ile Val Val Cys Lys Glu Asp Ser Ile  
 355 360 365  
 Glu Asn Gly Ile Ala Ala Met Leu Arg Glu Leu Glu Arg Ala Arg Gln  
 370 375 380  
 Phe Gly Phe Thr Glu Thr Glu Tyr Asn Arg Ala Arg Ala Glu Tyr Leu  
 385 390 395 400  
 Arg Gln Leu Glu Ser Ser Tyr Asn Glu Arg Asp Lys Gln Lys Asn Glu  
 405 410 415  
 Lys Tyr Val Asn Glu Tyr Val Arg His Phe Leu Asp Asn Glu Pro Ile  
 420 425 430  
 Pro Gly Ile Glu Asn Glu Tyr Thr Ile Ile Asn Gln Ile Ala Pro Asn  
 435 440 445  
 Ile Pro Val Ala Ala Ile Asn Gln Leu Met Lys Gly Leu Ile Thr Asp  
 450 455 460  
 Asp Asn Gln Ala Leu Ala Leu Phe Ala Pro Glu Lys Glu Asp Leu Lys  
 465 470 475 480  
 Leu Pro Ser Glu Ala Ala Ile Ala Lys Leu Leu Lys Asp Ala Lys Thr  
 485 490 495  
 Glu Lys Leu Thr Ala Tyr Val Asp Lys Val Ser Asp Glu Pro Leu Met  
 500 505 510  
 Ala Glu Ala Pro Lys Gly Gly Lys Ile Val Ser Glu Ser Lys Asp Asp  
 515 520 525  
 Ile Phe Gly Ala Thr Thr Leu Thr Leu Ser Asn Gly Val Lys Val Ile  
 530 535 540  
 Ile Lys Lys Thr Asp Phe Lys Ala Asp Glu Ile Arg Met Lys Gly Val  
 545 550 555 560  
 Ser Leu Gly Gly Ser Ser Val Phe Pro Asp Ser Glu Ile Ile Asn Ile  
 565 570 575  
 Asn Gly Leu Asp Ala Val Gly Val Gly Leu Gly Asn Phe Ser Ala  
 580 585 590  
 Val Asn Leu Glu Lys Val Leu Ala Gly Lys Lys Ala Ser Val Ser Tyr  
 595 600 605  
 Asp Ile Ala Asn Lys Thr Glu Ser Val Ser Gly Ser Cys Ser Pro Lys  
 610 615 620  
 Asp Phe Glu Thr Met Met Gln Leu Thr Tyr Leu Thr Phe Thr Ala Pro  
 625 630 635 640  
 Arg Arg Asp Asp Asp Ala Phe Ala Ser Tyr Lys Asn Arg Asn Lys Ala  
 645 650 655  
 Ala Leu Lys Asn Gln Glu Leu Asn Pro Asn Val Ala Phe Ser Asp Ser

660 665 670  
 Ile Gln Ala Gly Ile Tyr Met Lys His Pro Arg Ile Ile Arg Ile Lys  
 675 680 685  
 Ala Asp Met Val Asp Gln Met Asp Tyr Asp Lys Ile Leu Ser Met Tyr  
 690 695 700  
 Gln Asp Arg Phe Lys Asp Ala Ser Asp Phe Thr Phe Ile Phe Val Gly  
 705 710 715 720  
 Asn Val Asp Val Glu Lys Met Lys Pro Val Ile Ala Glu Tyr Leu Gly  
 725 730 735  
 Ala Leu Pro Ala Val Asn Arg Lys Glu Thr Phe Lys Asp Asn Lys Ile  
 740 745 750  
 Glu Met Arg Gln Gly Ile Tyr Lys Asn Glu Phe Thr Lys Gln Gln Glu  
 755 760 765  
 Thr Pro Lys Ala Ser Val Phe Ala Phe Tyr Asn Gly Asp Cys Lys Tyr  
 770 775 780  
 Asp Leu Arg Asn Asn Leu Leu Leu Ser Met Thr Ser Gln Ile Leu Asp  
 785 790 795 800  
 Leu Val Tyr Thr Glu Lys Val Arg Glu Asp Glu Gly Gly Thr Tyr Gly  
 805 810 815  
 Val Tyr Val Gly Thr Leu Gln Lys Tyr Pro Lys Glu Lys Ala Ile  
 820 825 830  
 Leu Gln Ile Phe Asp Thr Ala Pro Glu Lys Lys Glu Lys Leu Met  
 835 840 845  
 Lys Ile Ile Phe Gly Glu Ile Asp Asn Ile Thr Lys Thr Gly Pro Ser  
 850 855 860  
 Glu Ala Asn Leu Asn Lys Val Lys Glu Tyr Met Leu Lys Lys His Thr  
 865 870 875 880  
 Glu Asp Leu Lys Glu Asn Ser Tyr Trp Leu Gly Ser Ile Asp Glu Tyr  
 885 890 895  
 Leu Tyr Thr Gly Met Asn Arg Met Asn Asp Tyr Glu Lys Ile Val Asn  
 900 905 910  
 Ser Ile Thr Val Asn Asp Ile Arg Lys Phe Ala Asp Asp Leu Phe Lys  
 915 920 925  
 Gln Lys Asn Glu Val Glu Val Thr Met Val Ser Pro Glu Lys Lys  
 930 935 940

<210> 8491  
 <211> 91  
 <212> PRT  
 <213> B.fragilis

<400> 8491  
 Glu Glu Met Ala His Lys Lys Gly Val Gly Ser Ser Lys Asn Gly Arg  
 1 5 10 15  
 Glu Ser Gln Ser Lys Arg Leu Gly Val Lys Ile Phe Gly Gly Glu Ala  
 20 25 30  
 Cys Lys Ala Gly Asn Ile Ile Val Arg Gln Arg Gly Thr Glu Phe His  
 35 40 45  
 Pro Gly Glu Asn Ile Gly Met Gly Lys Asp His Thr Leu Phe Ala Leu  
 50 55 60  
 Val Asp Gly Thr Val Asn Phe Lys Val Gly Arg Glu Asp Arg Arg Tyr  
 65 70 75 80  
 Val Ser Ile Ile Pro Ala Glu Ala Thr Glu Ala  
 85 90

<210> 8492  
 <211> 370  
 <212> PRT  
 <213> B.fragilis



&lt;400&gt; 8492

Asn Ile Gly Ala Gly Ile Cys Thr Phe Val Pro Arg Lys Glu Glu Glu  
 1 5 10 15  
 Ala Met Lys Asn Arg Lys Arg Ile Ile Arg Tyr Ser Val Leu Gly Thr  
 20 25 30  
 Leu Ile Ala Leu Val Trp Leu Thr Gln Met Leu Pro Ala Leu Gly Glu  
 35 40 45  
 Gly Tyr Ala Arg Thr Ala Tyr Pro Val Ile Ser Tyr Ile Leu Ser Gly  
 50 55 60  
 Phe Ser Asn Ile Ile Pro Phe Ala Leu Gly Asp Leu Phe Ile Ala Leu  
 65 70 75 80  
 Ser Ile Gly Gly Met Ile Ala Tyr Pro Phe Tyr Ala Arg Ile Arg Leu  
 85 90 95  
 Lys Leu Ser Trp Lys Lys Ile Leu Arg Arg Asp Val Glu Tyr Leu Leu  
 100 105 110  
 Trp Ile Tyr Val Trp Phe Tyr Leu Ala Trp Gly Leu Asn Tyr Ser Gln  
 115 120 125  
 Lys Asn Phe Tyr Glu Arg Thr Gly Ile Pro Tyr Thr Ala Tyr Thr Pro  
 130 135 140  
 Glu Ile Phe Asn Glu Phe Val Asp Asn Tyr Ile Ser Lys Leu Asn Glu  
 145 150 155 160  
 Ser Tyr Val Pro Val Asn Arg Ile Asp Lys Glu Val Ile Arg Lys Glu  
 165 170 175  
 Ala Val Arg Gln Tyr Asn Leu Ile Ser Asp Thr Leu Gly Ile His Arg  
 180 185 190  
 Pro Thr His Ser Arg Pro Arg Val Lys Thr Met Met Phe Thr Pro Leu  
 195 200 205  
 Ile Ser Met Val Gly Val Thr Gly Ser Met Gly Pro Phe Phe Cys Glu  
 210 215 220  
 Phe Thr Leu Asn Gly Asp Leu Leu Pro Pro Gln Tyr Pro Ala Thr Tyr  
 225 230 235 240  
 Thr His Glu Leu Ala His Leu Leu Gly Ile Thr Ser Glu Ala Glu Ala  
 245 250 255  
 Asn Phe Tyr Ala Tyr Gln Val Cys Thr Arg Ser Val Asn Lys Glu Ile  
 260 265 270  
 Arg Phe Ser Gly Tyr Phe Ser Ile Leu Gly His Val Leu Ala Asn Ala  
 275 280 285  
 Arg Gln Leu Met Thr Glu Glu Glu Tyr Lys Lys Leu Phe Gly Ser Ile  
 290 295 300  
 Arg Pro Glu Ile Ile Glu Leu Ala Arg Lys Asp Gln Glu Tyr Trp Met  
 305 310 315 320  
 Ala Lys Tyr Ser Pro Leu Ile Gly Asp Ile Gln Asp Trp Ile Tyr Asp  
 325 330 335  
 Leu Tyr Leu Lys Gly Asn Lys Ile Glu Ser Gly Arg Lys Asn Tyr Ser  
 340 345 350  
 Glu Val Ile Gly Leu Leu Ile Ser Tyr Asn Glu Trp Lys Lys Glu Ser  
 355 360 365  
 Asn Lys  
 370

&lt;210&gt; 8493

&lt;211&gt; 340

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8493

Thr Ile Ile Tyr His Ile Lys Lys Lys Tyr Arg Lys Leu Met Gln Lys  
 1 5 10 15

Lys Thr Lys Glu Ser Pro Lys Gln Gln Asp Asp Leu Ser Leu Lys Asn  
 20 25 30  
 Lys His Leu Thr Ile His Lys Glu Leu Tyr Arg Gln Arg Thr Cys Phe  
 35 40 45  
 Asn Ala Arg Phe Phe Leu Tyr Leu Cys Arg Ile Phe Thr Arg Thr Ile  
 50 55 60  
 Val Ile Met Thr Lys Ala Asn Lys Val Leu Phe Ile Thr Gln Glu Ile  
 65 70 75 80  
 Thr Pro Tyr Val Ser Glu Ser Glu Met Ala Asn Ile Gly Arg His Leu  
 85 90 95  
 Pro Gln Ala Ile Gln Glu Lys Gly Arg Glu Ile Arg Thr Phe Met Pro  
 100 105 110  
 Lys Trp Gly Asn Ile Asn Glu Arg Arg Asn Gln Leu His Glu Val Ile  
 115 120 125  
 Arg Leu Ser Gly Met Asn Leu Ile Ile Asp Asp Thr Asp His Pro Leu  
 130 135 140  
 Ile Ile Lys Val Ala Ser Ile Gln Ser Ala Arg Met Gln Val Tyr Phe  
 145 150 155 160  
 Ile Asp Asn Asp Asp Tyr Phe Gln Asn Arg Leu Gln Thr Ala Asp Glu  
 165 170 175  
 Asn Gly Val Glu Tyr Asp Asp Asn Asp Ser Arg Ala Ile Phe Tyr Ala  
 180 185 190  
 Arg Gly Val Leu Glu Thr Val Lys Lys Leu Arg Trp Cys Pro Asp Val  
 195 200 205  
 Ile His Cys His Gly Trp Met Thr Ala Leu Ala Pro Leu Tyr Ile Lys  
 210 215 220  
 Lys Ala Tyr Lys Asp Glu Pro Ser Phe Arg Asp Ala Lys Val Val Phe  
 225 230 235 240  
 Ser Val Tyr Glu Asp Asp Phe Lys Gly Thr Phe Thr Asn Ala Leu Ala  
 245 250 255  
 Ser Asn Leu Met Leu Lys Gly Ile Asn Lys Lys Asp Val Ala Thr Leu  
 260 265 270  
 Lys Asp Pro Val Asp Tyr Val Thr Leu Cys Lys Leu Ala Val Asp Tyr  
 275 280 285  
 Ser Asp Gly Ile Val Gln Asn Ser Glu His Val Asn Glu Asp Val Met  
 290 295 300  
 Asn Tyr Ala Arg Gln Ser Gly Lys Leu Val Leu Asp Tyr Gln Ala Pro  
 305 310 315 320  
 Asp Ala Leu Ala Asp Ala Cys Asn Ser Phe Tyr Asp Gln Val Trp Glu  
 325 330 335  
 Ala Glu Gln Lys  
 340

<210> 8494  
 <211> 88  
 <212> PRT  
 <213> B.fragilis

<400> 8494  
 Val Phe Leu His Asn Asn Leu Lys Ala Cys Tyr Phe Asp Asn Glu Gly  
 1 5 10 15  
 Val Ala Thr Glu Leu Cys Pro Val Phe Glu Gly Thr Ile Ser Ala Asp  
 20 25 30  
 Ser Lys Thr Phe Cys Thr Leu Leu Ile Arg Lys Met Asn Phe Asp Leu  
 35 40 45  
 Pro Ser Ser Thr Leu Arg Phe Ser Arg Glu Arg Lys Arg Asn Gly Leu  
 50 55 60  
 Thr Tyr Gly Val Met Tyr Leu Leu Ser Tyr Leu Phe Met Pro Ile Lys  
 65 70 75 80

Ala Phe Cys Phe Pro Ser Tyr Leu  
85

<210> 8495  
<211> 195  
<212> PRT  
<213> B.fragilis

<400> 8495

Glu Ser Glu Gln Leu Thr Met Asp Lys Lys Val Glu Leu Gln Val Leu  
1 5 10 15  
Asn Ile Ser Asn Ser Gln Ala Gln Val Gly Ala Tyr Ala Met Val Leu  
20 25 30  
Gly Glu Val Asp Gly Glu Arg Gln Leu Pro Ile Ile Ile Gly Pro Ala  
35 40 45  
Glu Ala Gln Ala Thr Ala Ile Cys Leu Lys Gly Ile Lys Ala Pro Arg  
50 55 60  
Pro Leu Thr His Asp Leu Phe Tyr Ser Cys Leu Asn Val Leu Gly Ala  
65 70 75 80  
Thr Leu Leu Arg Val Leu Ile Tyr Lys Ala Lys Glu Gly Val Phe Tyr  
85 90 95  
Ser Tyr Ile Tyr Phe Lys Lys Asp Glu Ile Ile Arg Ile Asp Ala  
100 105 110  
Arg Thr Ser Asp Ala Val Ala Leu Ala Val Arg Ala Asp Cys Pro Ile  
115 120 125  
Phe Ile Tyr Glu Ser Ile Leu Glu Arg Glu Cys Ile Arg Leu Thr Asp  
130 135 140  
Gly Asp Glu Arg Pro Asp Thr Pro Glu Glu Asp Glu Asn Ser Arg Thr  
145 150 155 160  
Glu Pro Val Ser Ile Ile Ser Leu Glu Glu Ala Leu Asn Lys Ala Ile  
165 170 175  
Gln Glu Glu Asn Tyr Glu Leu Ala Ala Arg Leu Arg Asp Glu Ile Asn  
180 185 190  
Arg His Lys  
195

<210> 8496  
<211> 398  
<212> PRT  
<213> B.fragilis

<400> 8496

Lys Gln His Asn Lys Phe Met His Lys Val Tyr Leu Lys Pro Gly Lys  
1 5 10 15  
Glu Asp Ser Leu Lys Arg Phe His Pro Trp Ile Phe Ser Gly Ala Ile  
20 25 30  
Ala His Phe Asp Gly Glu Pro Glu Glu Gly Glu Val Val Glu Val Tyr  
35 40 45  
Thr Ser Lys Lys Glu Phe Ile Ala Lys Gly His Phe Gln Ile Gly Ser  
50 55 60  
Ile Ala Val Arg Val Leu Ser Phe Lys Gln Glu Glu Ile Asn His Asp  
65 70 75 80  
Phe Trp Lys His Lys Leu Glu Val Ala Tyr Asp Met Arg Arg Ser Ile  
85 90 95  
Gly Ile Ala Thr Asn Pro Thr Asn Asn Thr Tyr Arg Leu Val His Gly  
100 105 110  
Glu Gly Asp Asn Leu Pro Gly Leu Val Ile Asp Val Tyr Ala Arg Thr  
115 120 125  
Ala Val Met Gln Ala His Ser Ala Gly Met His Val Asp Arg Met Ala

130 135 140  
 Ile Ala Glu Ala Leu Ser Glu Val Met Gly Asp Gln Ile Glu Asn Ile  
 145 150 155 160  
 Tyr Tyr Lys Ser Glu Thr Thr Leu Pro Phe Lys Ala Asp Leu Phe Pro  
 165 170 175  
 Glu Asn Gly Phe Leu Lys Gly Gly Ser Ser Asp Asn Ile Ala Gln Glu  
 180 185 190  
 Tyr Gly Leu Lys Phe His Val Asp Trp Leu Lys Gly Gln Lys Thr Gly  
 195 200 205  
 Phe Phe Val Asp Gln Arg Glu Asn Arg Ala Leu Leu Glu Arg Tyr Ala  
 210 215 220  
 Lys Gly Arg Ser Val Leu Asn Met Phe Cys Tyr Thr Gly Gly Phe Ser  
 225 230 235 240  
 Phe Tyr Ala Met Arg Gly Gly Ala Lys Gln Val His Ser Val Asp Ser  
 245 250 255  
 Ser Ala Lys Ala Ile Asp Leu Thr Asn Lys Asn Val Glu Leu Asn Phe  
 260 265 270  
 Pro Gly Asp Thr Arg His Ala Ala Phe Ala Glu Asp Ala Phe Lys Tyr  
 275 280 285  
 Leu Asp Arg Met Gly Asp Gln Tyr Asp Leu Ile Ile Leu Asp Pro Pro  
 290 295 300  
 Ala Phe Ala Lys His Lys Asp Ala Leu Arg Asn Ala Leu Gln Gly Tyr  
 305 310 315 320  
 Arg Lys Leu Asn Ala Lys Ala Phe Glu Lys Ile Lys Pro Gly Gly Ile  
 325 330 335  
 Leu Phe Thr Phe Ser Cys Ser Gln Val Val Thr Lys Asp Asn Phe Arg  
 340 345 350  
 Thr Ala Val Phe Thr Ala Ala Ala Met Ser Gly Arg Ser Val Arg Ile  
 355 360 365  
 Leu His Gln Leu Thr Gln Pro Ala Asp His Pro Val Asn Ile Tyr His  
 370 375 380  
 Pro Glu Gly Glu Tyr Leu Lys Gly Leu Val Leu Tyr Val Glu  
 385 390 395

&lt;210&gt; 8497

&lt;211&gt; 763

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8497

Ile Met Asn Lys Ile Ile Ser Lys Glu His Phe Ser Glu Lys Val Phe  
 1 5 10 15  
 Lys Leu Val Ile Glu Ala Pro Leu Ile Ala Lys Ser Arg Lys Ala Gly  
 20 25 30  
 His Phe Val Ile Val Arg Val Gly Glu Lys Gly Glu Arg Met Pro Leu  
 35 40 45  
 Thr Ile Ala Ala Ala Asp Pro Lys Ala Gly Thr Ile Thr Leu Val Val  
 50 55 60  
 Gln Glu Val Gly Leu Ser Ser Thr Arg Leu Cys Glu Leu Asn Glu Gly  
 65 70 75 80  
 Asp Tyr Ile Thr Asp Val Val Gly Pro Leu Gly Gln Ala Thr His Ile  
 85 90 95  
 Glu Asn Phe Gly Thr Val Val Cys Ala Gly Gly Gly Val Gly Val Ala  
 100 105 110  
 Pro Met Leu Pro Ile Val Gln Ala Leu Lys Ala Ala Gly Asn Arg Val  
 115 120 125  
 Ile Thr Val Leu Ala Gly Arg Ser Lys Glu Leu Ile Ile Leu Glu Lys  
 130 135 140  
 Glu Met Arg Glu Ser Ser Asp Glu Val Ile Ile Met Thr Asp Asp Gly

145 150 155 160  
 Ser Tyr Gly Arg Lys Gly Leu Val Thr Glu Gly Val Glu Glu Val Ile  
 165 170 175  
 Lys Arg Glu Lys Val Asn Lys Cys Phe Ala Ile Gly Pro Ala Ile Met  
 180 185 190  
 Met Lys Phe Val Cys Leu Leu Thr Lys Lys Tyr Glu Ile Pro Thr Glu  
 195 200 205  
 Val Ser Leu Asn Thr Ile Met Val Asp Gly Thr Gly Met Cys Gly Ala  
 210 215 220  
 Cys Arg Ile Thr Ile Gly Lys Thr Lys Phe Val Cys Val Asp Gly  
 225 230 235 240  
 Pro Glu Phe Asp Gly His Gln Val Asp Phe Asp Glu Met Leu Lys Arg  
 245 250 255  
 Met Gly Ala Phe Lys Thr Ile Glu Arg Glu Glu Leu His Lys Leu Asp  
 260 265 270  
 Glu Cys Glu Ala Thr Lys Val Ile Asp Glu Asn Gly Arg Thr Ala Pro  
 275 280 285  
 Trp Arg Glu Ala Leu Arg Lys Ala Ile Lys Ala Lys Asp Arg Ala Asn  
 290 295 300  
 Ile Glu Arg Cys Gln Met Asn Glu Leu Asp Pro Glu Tyr Arg Ser His  
 305 310 315 320  
 Ser Arg Lys Glu Glu Val Asn Gln Gly Leu Thr Lys Glu Gln Ala Val  
 325 330 335  
 Thr Glu Ala Gln Arg Cys Leu Asp Cys Ala Asn Pro Gly Cys Met Thr  
 340 345 350  
 Gly Cys Pro Val Gly Ile Asp Ile Pro Arg Phe Ile Lys Asn Ile Glu  
 355 360 365  
 Arg Gly Glu Phe Leu Glu Ala Ala Lys Thr Leu Lys Glu Thr Ser Ala  
 370 375 380  
 Leu Pro Ala Val Cys Gly Arg Val Cys Pro Gln Glu Lys Gln Cys Glu  
 385 390 395 400  
 Ser Lys Cys Ile His Leu Lys Met Gly Lys Glu Ala Val Ala Ile Gly  
 405 410 415  
 His Leu Glu Arg Phe Ala Ala Asp Tyr Glu Arg Glu Ser Gly Gln Ile  
 420 425 430  
 Ser Val Pro Glu Val Gly Glu Lys Asn Gly Ile Lys Val Ala Val Ile  
 435 440 445  
 Gly Ser Gly Pro Ala Gly Leu Ser Phe Ala Gly Asp Met Ala Lys Tyr  
 450 455 460  
 Gly Tyr Asp Val Thr Val Phe Glu Ala Leu His Glu Ile Gly Gly Val  
 465 470 475 480  
 Leu Lys Tyr Gly Ile Pro Glu Phe Arg Leu Pro Asn Lys Ile Val Asp  
 485 490 495  
 Val Glu Ile Glu Asn Leu Ala Lys Met Gly Val Thr Phe Ile Lys Asp  
 500 505 510  
 Cys Ile Val Gly Lys Thr Ile Ser Val Glu Gln Leu Glu Glu Glu Gly  
 515 520 525  
 Phe Lys Gly Ile Phe Val Ala Ser Gly Ala Gly Leu Pro Asn Phe Met  
 530 535 540  
 Asn Ile Pro Gly Glu Asn Ser Ile Asn Ile Met Ser Ser Asn Glu Tyr  
 545 550 555 560  
 Leu Thr Arg Val Asn Leu Met Asp Ala Ala Ser Pro Asp Ser Asp Thr  
 565 570 575  
 Pro Val Ala Phe Gly Lys Asn Val Ala Val Ile Gly Gly Gly Asn Thr  
 580 585 590  
 Ala Met Asp Ser Val Arg Thr Ala Lys Arg Leu Gly Ala Glu Arg Ala  
 595 600 605  
 Met Ile Ile Tyr Arg Arg Ser Glu Glu Glu Met Pro Ala Arg Leu Glu  
 610 615 620

145 150 155 160  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395 400  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475 480  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555 560  
 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620

Glu	Val	Lys	His	Ala	Lys	Glu	Glu	Gly	Ile	Glu	Phe	Leu	Thr	Leu	His
625					630					635					640
Asn	Pro	Ile	Glu	Tyr	Leu	Ala	Asp	Glu	Gln	Gly	Arg	Val	Lys	Gln	Val
				645					650					655	
Ile	Leu	Gln	Lys	Met	Glu	Leu	Gly	Glu	Pro	Asp	Ala	Ser	Gly	Arg	Arg
			660					665					670		
Ser	Pro	Val	Pro	Ile	Pro	Gly	Ala	Thr	Glu	Thr	Val	Asp	Ile	Asp	Leu
		675					680					685			
Ala	Ile	Val	Ser	Val	Gly	Val	Ser	Pro	Asn	Pro	Ile	Val	Pro	Ser	Ser
	690					695					700				
Ile	Lys	Gly	Leu	Glu	Leu	Gly	Arg	Lys	Gly	Thr	Ile	Thr	Val	Asn	Asp
705					710					715					720
Gln	Met	Gln	Ser	Ser	Ile	Pro	Thr	Ile	Tyr	Ala	Gly	Gly	Asp	Ile	Val
				725					730					735	
Arg	Gly	Gly	Ala	Thr	Val	Ile	Leu	Ala	Met	Gly	Asp	Gly	Arg	Arg	Ala
			740					745					750		
Ala	Ala	Ala	Met	Asn	Glu	Gln	Leu	Ser	Ser	Lys					
		755					760								

<210> 8498

<211> 507

<212> PRT

<213> B.fragilis

<400> 8498

Thr 1	Lys	Ile	Asn	Lys 5	Asn	Leu	Asp	Thr	Thr 10	Ile	Met	Lys	Ala	Lys 15	Tyr
Val	Trp	Val	Ala	Leu	Leu	Ala	Leu	Thr	Phe	Phe	Gly	Cys	Asp	Asp 20	Asn
Thr	Gly	Thr	Ile	Gly	Trp	Asp	Met	Leu	Pro	Asp	Ser	Asp	Gln	Asn 25	Ile
Asn	Gly	Arg	Tyr	Thr	Thr	Tyr	Glu	Leu	Thr	Thr	Asn	Ser	Asp	Leu 30	Ser
Gly	Pro	Val	Phe	Ala	Lys	Thr	Ser	Val	Gly	Tyr	Val	Gly	Lys	Phe 35	Thr
65	Asp	Lys	Glu	Phe	Gly	Glu	Tyr	Glu	Ala	Ser	Phe	Leu	Ala	Gln 40	Leu
Asp	Lys	Glu	Phe	Gly	Glu	Tyr	Glu	Ala	Ser	Phe	Leu	Ala	Gln	Leu 45	Asn
Ser	Pro	Asp	Gly	Ile	Ser	Phe	Pro	Ser	Val	Tyr	Asp	Pro	Glu	Thr 50	Asn
Pro	Lys	Gly	Val	Met	Ala	Gly	Asp	Ser	Ile	His	Thr	Ala	Glu	Leu 55	Ile
Leu	Tyr	Tyr	Lys	Ser	Tyr	Phe	Gly	Asp	Ser	Ile	Asn	Pro	Cys	Arg 60	Met
Thr	Val	Tyr	Glu	Leu	Asp	Glu	Asn	Leu	Thr	Gln	Asn	Tyr	Tyr	Thr 65	Asp
145	Ile	Asp	Pro	Leu	Lys	Tyr	Tyr	Asn	Pro	Asn	Asn	Leu	Leu	Ala 70	Lys
Ala	Tyr	Thr	Ala	Val	Asp	Gln	Ser	Leu	Ser	Asp	Ser	Ile	Arg	Asn 75	Ser
Asp	Asp	Phe	Tyr	Pro	Asn	Val	Arg	Leu	Thr	Ser	Glu	Glu	Ile	Thr 80	Lys
Leu	Gly	Lys	Arg	Ile	Tyr	Arg	Leu	Asn	Arg	Asp	His	Pro	Glu	Tyr 85	Phe
Lys	Thr	Ser	Glu	Ala	Phe	Ile	Asn	Asn	Val	Phe	Lys	Gly	Ile	Tyr 90	Ala
225	Lys	Asn	Asp	Tyr	Gly	Asn	Gly	Thr	Ile	Leu	Tyr	Val	Asp	Gln 95	Asn
Lys	Asn	Val	Val	Ile	Arg	Cys	His	Glu	Lys	Asp	Ser	Leu	Gly	Asn 100	Asn
Leu	Asn	Val	Val	Ile	Arg	Cys	His	Glu	Lys	Asp	Ser	Leu	Gly	Asn 105	Asn
260								265						270	

Leu Lys Lys Lys Asn Gly Ala Asp Ser Leu Tyr Tyr Thr Thr Arg Thr  
 275 280 285  
 Phe Ala Thr Thr Lys Glu Val Ile Gln Ala Asn Lys Phe Val Asn Ser  
 290 295 300  
 Glu Lys Leu Asn Glu Ile Ala Lys Lys Thr Asp Cys Thr Tyr Leu Lys  
 305 310 315 320  
 Ser Pro Ala Gly Ile Phe Thr Gln Ala Thr Leu Pro Ile Asn Lys Ile  
 325 330 335  
 Tyr Glu Glu Leu Ser His Asp Thr Ile Asn Ala Val Lys Leu Thr Phe  
 340 345 350  
 Asn Ser Tyr Asn Gln Pro Asp Asn Gly Lys Phe Ser Met Lys Ala Pro  
 355 360 365  
 Thr Tyr Val Leu Leu Leu Arg Glu Lys Glu Arg Gln Ser Phe Phe Glu  
 370 375 380  
 Glu Asn Lys Leu Thr Asp Asn Ile Thr Ser Tyr Leu Ala Val His Asn  
 385 390 395 400  
 Ala Ile Ile Ser Asn Lys Pro Thr Thr Asn Gln Tyr Val Phe Thr Asn  
 405 410 415  
 Leu Thr Arg Leu Ile Asn Ala Cys Val Asn Glu Lys Gln Glu Ala Lys  
 420 425 430  
 Lys Lys Ala Gly Asp Ser Trp Asn Glu Ala Ala Trp Glu Ala Ala Asn  
 435 440 445  
 Pro Asp Trp Asn Lys Val Val Leu Ile Pro Val Leu Val Gln Tyr Asp  
 450 455 460  
 Ser Ser Ser Asn Lys Asn Met Ile Ser Ile Gln His Asp Leu Gln Pro  
 465 470 475 480  
 Gly Tyr Val Lys Leu Glu Gly Gly Pro Asp Gly Thr Lys Leu Lys Leu  
 485 490 495  
 Glu Val Thr Tyr Thr Asn Phe Asn Gly Lys Gln  
 500 505

&lt;210&gt; 8499

&lt;211&gt; 305

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8499

Lys Met Glu Lys Phe Glu Leu His Ile Leu Gly Cys Gly Ser Ala Leu  
 1 5 10 15  
 Pro Thr Thr Arg His Phe Ala Thr Ser Gln Val Val Asn Leu Arg Asp  
 20 25 30  
 Lys Leu Phe Met Ile Asp Cys Gly Glu Arg Ala Gln Met Gln Leu Arg  
 35 40 45  
 Lys Ser Arg Leu Lys Phe Ser Arg Leu Asn His Ile Phe Ile Ser His  
 50 55 60  
 Leu His Gly Asp His Cys Phe Gly Leu Met Gly Leu Ile Ser Thr Phe  
 65 70 75 80  
 Gly Leu Leu Gly Arg Thr Ala Glu Leu His Ile His Ser Pro Lys Gly  
 85 90 95  
 Leu Glu Glu Leu Thr Pro Met Leu Asn Phe Phe Cys His Thr Leu  
 100 105 110  
 Ala Tyr Lys Val Ile Phe His Glu Phe Asp Thr Arg Gln Thr Ser Val  
 115 120 125  
 Val Tyr Glu Asp Arg Ser Met Thr Val Thr Thr Ile Pro Leu Gln His  
 130 135 140  
 Arg Ile Pro Cys Cys Gly Phe Leu Phe Ala Glu Lys Ala Arg Pro Asn  
 145 150 155 160  
 His Ile Ile Arg Asp Met Val Asp Phe Tyr Lys Val Pro Val Tyr Glu  
 165 170 175

Leu Asn Arg Ile Lys Asn Gly Ser Asp Tyr Val Thr Pro Glu Gly Glu  
                   180                  185                  190  
 Val Ile Ala Asn Thr Arg Leu Thr Arg Pro Ser Asp Pro Pro Arg Lys  
                   195                  200                  205  
 Tyr Ala Tyr Cys Ser Asp Thr Ile Phe Arg Pro Glu Ile Val Glu Gln  
                   210                  215                  220  
 Leu Ser Gly Val Asp Leu Leu Phe His Glu Ala Thr Phe Ala Glu Ser  
                   225                  230                  235                  240  
 Glu Leu Ala Arg Ala Lys Glu Thr Tyr His Thr Thr Ala Ala Gln Ala  
                   245                  250                  255  
 Ala Arg Ile Ala Leu Glu Ala Gly Val Arg Gln Leu Val Ile Gly His  
                   260                  265                  270  
 Phe Ser Ala Arg Tyr Glu Asp Glu Ser Ile Leu Leu Lys Glu Ala Ser  
                   275                  280                  285  
 Ala Val Phe Pro Asn Thr Ile Leu Ala Lys Glu Asn Leu Cys Ile Ser  
                   290                  295                  300  
 Leu  
 305

<210> 8500  
 <211> 159  
 <212> PRT  
 <213> B.fragilis

<400> 8500  
 Ser Glu Met Lys Lys Leu Ile Ile Leu Leu Ile Ile Val Cys Gly Phe  
 1                  5                  10                  15  
 Thr Pro Ala Leu Arg Ala Val Gly Ser Pro Asn Gln His Leu Ser Pro  
                   20                  25                  30  
 Lys Glu Phe Arg Ala Lys Gln Gln Ala Phe Ile Thr Glu Lys Ala Gly  
                   35                  40                  45  
 Leu Thr Gln Glu Glu Ala Ala Lys Phe Phe Pro Val Tyr Phe Glu Leu  
                   50                  55                  60  
 Gln Asp Arg Lys Lys Gln Leu Asn Asp Glu Ala Trp Lys Leu Leu Arg  
                   65                  70                  75                  80  
 Ser Gly Lys Asp Glu Lys Thr Thr Asp Thr Gln Tyr Gly Glu Ile Leu  
                   85                  90                  95  
 Glu Gly Val Tyr Asp Ala Arg Ile Ala Ser Asp Arg Leu Asp Lys Thr  
                   100                  105                  110  
 Tyr Phe Glu Lys Phe Lys Lys Ile Leu Ser Cys Lys Lys Ile Tyr Leu  
                   115                  120                  125  
 Val Gln Arg Ala Glu Met Arg Phe His Arg Glu Leu Leu Lys Gly Val  
                   130                  135                  140  
 Arg Asp Asn Lys Gly Gly Asn Glu Arg Pro Gln Gly Lys Arg Lys  
                   145                  150                  155

<210> 8501  
 <211> 232  
 <212> PRT  
 <213> B.fragilis

<400> 8501  
 Asn Leu Lys Lys Tyr Ala Asn Met Arg Pro Glu Ile Arg Gln Ile Leu  
 1                  5                  10                  15  
 Leu Thr Met Val Leu Pro Leu Phe Leu Ile Phe Ile Leu Tyr Met Ile  
                   20                  25                  30  
 Lys Val Leu Glu Ile Gly Met Asp Trp Asp Phe Ile Ser Leu Gly Val  
                   35                  40                  45  
 Tyr Pro Leu Ser Lys Lys Gly Met Phe Gly Ile Phe Thr His Pro Leu



50		55		60
Ile His Ser Ser Phe Lys His Leu Leu Thr Asn Thr Leu Pro Leu Phe				
65		70		75
Phe Leu Ser Trp Cys Leu Phe Tyr Phe Tyr Arg Ser Ile Ala Pro Ser				80
	85		90	95
Ile Phe Leu Ile Ile Trp Ile Gly Cys Gly Ala Ile Thr Phe Leu Ile				
	100		105	110
Gly Lys Pro Ala Trp His Ile Gly Ala Ser Gly Ile Ile Tyr Gly Leu				
	115		120	125
Ala Phe Phe Leu Phe Phe Ser Gly Leu Leu Arg Lys Tyr Ile Pro Leu				
	130		135	140
Ile Ala Ile Ser Leu Leu Val Thr Phe Leu Tyr Gly Gly Leu Ile Trp				
145		150		155
Asn Met Leu Pro Tyr Phe Thr Pro Ser Gly Ile Ser Trp Glu Gly His				160
	165		170	175
Leu Ser Gly Ala Ile Ile Gly Thr Ile Cys Ala Phe Ser Phe Met Gly				
	180		185	190
Tyr Gly Pro Gln Lys Pro Asp Pro Phe Ala Asn Glu Gln Glu Glu Glu				
	195		200	205
Ser Val Ser Ala Thr Asp Glu Thr Asp Asn Ile Glu Met Asp Lys Glu				
	210		215	220
Glu Glu His Glu Ile Asp Ala Glu				
225		230		

&lt;210&gt; 8502

&lt;211&gt; 263

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8502

Arg Gly Glu Lys Gly Lys Arg Arg Glu Arg Arg Lys Lys Glu Lys Lys				
1	5	10	15	
Arg Arg Arg Lys Glu Glu Glu Lys Lys Gly Lys Lys Glu Lys Lys Arg				
	20	25	30	
Glu Arg Lys Glu Lys Arg Glu Arg Lys Lys Lys Arg Lys Gly Gly Glu				
	35	40	45	
Lys Glu Lys Glu Glu Gly Glu Glu Arg Gly Lys Gly Glu Arg Arg				
	50	55	60	
Arg Arg Lys Gly Lys Arg Lys Arg Glu Glu Gly Lys Gly Arg Glu Gly				
65	70	75	80	
Lys Arg Lys Glu Glu Gly Lys Lys Gly Arg Lys Glu Lys Arg Arg Lys				
	85	90	95	
Lys Lys Glu Arg Glu Arg Gly Lys Lys Glu Lys Gly Gly Lys Lys Glu				
	100	105	110	
Lys Lys Arg Lys Lys Lys Arg Lys Glu Glu Lys Gly Arg Lys Glu Lys				
	115	120	125	
Lys Glu Lys Arg Glu Glu Gly Lys Lys Gly Glu Lys Gly Arg Glu Arg				
	130	135	140	
Glu Arg Glu Glu Gly Arg Glu Lys Gly Arg Arg Arg Asp Lys Glu				
145	150	155	160	
Lys Lys Glu Arg Lys Gly Arg Lys Glu Gly Lys Arg Lys Gly Arg Arg				
	165	170	175	
Arg Lys Gly Gly Glu Lys Glu Arg Lys Glu Arg Lys Gly Arg Glu Lys				
	180	185	190	
Glu Arg Gly Lys Lys Lys Glu Lys Lys Gly Glu Arg Gly Gly Lys Lys				
	195	200	205	
Arg Gly Arg Lys Arg Gly Gly Arg Gly Lys Arg Lys Arg Gly Lys Arg				
	210	215	220	
Arg Lys Arg Glu Arg Glu Gly Gly Gly Gly Glu Gly Arg Arg Gly Arg				

[illegible]

<400> 8503

Gln	Asn	Ile	Glu	Ile	Met	Asn	Asn	Leu	Val	Trp	Lys	Leu	Leu	Arg	Gln
1				5					10					15	
His	Ile	Ser	Ile	Gly	Gln	Leu	Thr	Gly	Phe	Phe	Phe	Ala	Asn	Leu	Phe
			20					25					30		
Gly	Met	Val	Ile	Val	Leu	Leu	Ser	Ala	Gln	Phe	Tyr	Lys	Asp	Val	Val
		35					40					45			
Pro	Ile	Phe	Thr	Glu	Gly	Asp	Ser	Phe	Met	Lys	Lys	Asp	Tyr	Met	Thr
	50					55					60				
Ala	Thr	Lys	Lys	Ile	Ser	Thr	Leu	Gly	Ser	Phe	Ala	Gly	Lys	Ser	Asn
65				70						75					80
Thr	Phe	Ser	Ser	Glu	Ile	Glu	Glu	Leu	Lys	Lys	Gln	Pro	Phe	Thr	
				85				90					95		
Arg	Ser	Val	Gly	Ala	Phe	Thr	Pro	Ser	Gln	Phe	Lys	Val	Ser	Ala	Gly
			100					105					110		
Leu	Gly	Met	Gln	Glu	Ala	Gly	Ile	His	Leu	Ser	Thr	Glu	Met	Phe	Phe
		115					120					125			
Glu	Ala	Val	Pro	Asp	Lys	Phe	Val	Asp	Val	Ser	Leu	Asp	Lys	Trp	His
	130					135					140				
Phe	Asp	Glu	Asn	Thr	His	Thr	Ile	Pro	Ile	Ile	Ile	Pro	Arg	Asn	Tyr
145				150						155					160
Leu	Asn	Leu	Tyr	Asn	Phe	Gly	Phe	Ala	Gln	Ser	Arg	Ser	Leu	Pro	Lys
				165				170						175	
Leu	Ser	Glu	Gly	Leu	Met	Ser	Leu	Ile	Gln	Met	Asp	Ile	Leu	Met	Arg
			180					185					190		
Gly	Asn	Gly	Arg	Val	Glu	Gln	Tyr	Lys	Gly	Asn	Ile	Val	Gly	Phe	Ser
		195					200				205				
Asn	Arg	Leu	Asn	Thr	Ile	Leu	Val	Pro	Gln	Ser	Phe	Met	Asn	Trp	Ala
	210					215					220				
Asn	Gln	Asn	Phe	Ala	Pro	Asp	Ser	Gln	Pro	Asp	Pro	Ser	Arg	Leu	Ile
225				230						235					240
Ile	Glu	Val	Asp	Asn	Pro	Ala	Asp	Ala	Ser	Ile	Ala	Lys	Tyr	Phe	Gln
				245					250					255	
Gln	Lys	Gly	Tyr	Glu	Thr	Glu	Asp	Gly	Lys	Leu	Asp	Ala	Gly	Lys	Thr
			260					265					270		
Thr	Tyr	Phe	Leu	Arg	Leu	Ile	Val	Gly	Ile	Val	Leu	Ala	Val	Gly	Leu
		275					280					285			
Phe	Ile	Ser	Ile	Leu	Ser	Phe	Tyr	Ile	Leu	Met	Leu	Ser	Ile	Phe	Leu
	290					295					300				
Leu	Leu	Gln	Lys	Asn	Thr	Val	Lys	Leu	Glu	Ser	Leu	Leu	Leu	Ile	Gly
305				310						315					320
Tyr	Ser	Pro	Ser	Arg	Val	Ala	Leu	Pro	Tyr	Gln	Ile	Leu	Thr	Leu	Gly
				325					330					335	
Leu	Asn	Ile	Val	Val	Leu	Leu	Leu	Ser	Val	Gly	Ile	Val	Ser	Trp	Ala
			340					345					350		
Arg	Thr	Ser	Tyr	Leu	Thr										

370                      375                      380  
 Leu Val Ser Ser Ile Asn Val Ile Ile Leu Lys Lys Lys Met Leu Ser  
 385                      390                      395                      400  
 Ile Trp Ile His Lys Ala  
                     405

<210> 8504  
 <211> 389  
 <212> PRT  
 <213> B.fragilis

<400> 8504  
 Thr Ile Thr Glu Met Lys Gln Thr Lys Thr Ile Leu Ala Val Ile Leu  
 1                      5                      10                      15  
 Leu Val Val Leu Val Gly Cys Gly Glu Asn Ile Gln Ser Asn Asn Asp  
                     20                      25                      30  
 Leu Ile Ile Val Asp Val Ser Lys Ser Tyr Pro Lys Lys Glu Leu Ile  
                     35                      40                      45  
 Leu Gln Asp Phe Met Asp Val Glu Tyr Val Ala Leu Glu Thr Thr Asp  
 50                      55                      60  
 Glu Phe Leu Thr Gln Gly Leu Val Gln Asp Val Gly Lys Glu Tyr Ile  
 65                      70                      75                      80  
 Leu Ala Thr Asn Arg Asn Asn Asp Gly Asp Ile Phe Ile Phe Asp Arg  
                     85                      90                      95  
 Lys Thr Gly Lys Gly Val Arg Lys Ile Asn Arg Arg Gly Gln Gly Ala  
                     100                      105                      110  
 Glu Glu Tyr Ala Arg Ile Asn Glu Ile Ile Leu Asp Glu Asn Asn Gly  
                     115                      120                      125  
 Glu Ile Phe Val Lys Ser Pro Gly Asn Lys Ile Leu Val Tyr Asp Leu  
 130                      135                      140  
 Tyr Gly Lys Phe Lys Arg Cys Leu Ser Leu Asp Arg Glu Val Ser Ser  
 145                      150                      155                      160  
 Ile Phe Asp Tyr Asp Lys Asp Asn Leu Ile Cys Tyr Asp Met Ser Asp  
                     165                      170                      175  
 Tyr His Ser Lys Gly Glu Asp Arg Thr Lys Ser Tyr His Ile Ile Leu  
                     180                      185                      190  
 Ser Lys Gln Asp Gly Ser Ile Thr Arg Asp Ile Phe Ile Pro Phe Lys  
                     195                      200                      205  
 Thr Ile Asp Thr Pro Ile Val Asn Asp Gly Asp Arg Phe Ile Ala Asn  
 210                      215                      220  
 Tyr Ser Tyr Gln Ile Arg Leu Ser Asn Gly Lys Cys Thr Leu Met Asp  
 225                      230                      235                      240  
 Thr Ser Ala Asp Thr Leu Tyr Asn Tyr Ala Ser Asp Gly Thr Leu Ser  
                     245                      250                      255  
 Pro Phe Val Val Arg Thr Pro Ser Ala His Thr Met Glu Pro Glu Val  
                     260                      265                      270  
 Phe Leu Tyr Met Gly Ile His Thr Asp Arg Tyr Tyr Phe Met Glu Ala  
                     275                      280                      285  
 Val Lys Asn Val Phe Asn Phe Glu Lys Gly Asn Gly Phe Tyr Ala Asp  
 290                      295                      300  
 Glu Leu Val Tyr Asp Lys Glu Glu Lys Ala Val Phe Gln Val Thr Ile  
 305                      310                      315                      320  
 Tyr Asn Asp Asp Tyr Val Asp Lys Arg Thr Val Ala Met Thr Ala Lys  
                     325                      330                      335  
 Pro Ile Asn Arg Glu Ile Glu Asp Val Thr Ser Leu Asn Ala Ala Arg  
                     340                      345                      350  
 Leu Val Glu Ile Tyr Lys Lys Asp Gln Leu Lys Asp Gly Lys Leu Lys  
                     355                      360                      365  
 Glu Ile Ala Ser Arg Leu Asn Glu Glu Asp Asn Pro Val Ile Met Leu

370  
Val Lys Gln Lys Lys  
385

375

380

<210> 8505  
<211> 176  
<212> PRT  
<213> B.fragilis

&lt;400&gt; 8505

Lys	Lys	Asn	Glu	Cys	Met	Lys	Lys	Tyr	Leu	Phe	Asn	Leu	Leu	Leu	Phe
1				5					10					15	
Thr	Val	Leu	Val	Ile	Gly	Leu	Ser	Gly	Cys	Arg	Thr	Ser	Ala	Pro	Lys
		20						25					30		
Leu	Asp	Tyr	Lys	Lys	Leu	Ala	Arg	Ala	Ser	Val	Arg	Leu	Gly	Val	Asp
		35					40					45			
Ile	Gly	Met	Glu	Asp	Asn	His	Lys	Leu	Tyr	Leu	Glu	Ala	Ala	Glu	Trp
		50				55					60				
Ile	Gly	Thr	Pro	Tyr	Arg	Gly	Gly	Gly	Glu	Thr	Lys	Arg	Gly	Thr	Asp
65					70					75					80
Cys	Ser	Gly	Met	Thr	Cys	Gln	Ile	Tyr	Lys	Lys	Val	Tyr	His	Ile	Lys
				85					90					95	
Leu	Gln	Arg	Ser	Thr	Asp	Gly	Gln	Lys	Lys	Glu	Ser	Ser	Lys	Val	Ala
			100					105					110		
Arg	Arg	Asn	Leu	Arg	Glu	Gly	Asp	Leu	Val	Phe	Phe	Ser	Ser	Arg	Lys
		115					120						125		
Ser	Arg	Arg	Lys	Val	Ala	His	Val	Gly	Ile	Tyr	Leu	Lys	Asp	Gly	Lys
		130				135					140				
Phe	Val	His	Ala	Ser	Thr	Ser	Gln	Gly	Val	Ile	Val	Ser	Ser	Leu	Asn
145					150					155					160
Glu	Pro	Tyr	Tyr	Arg	Thr	His	Trp	Ile	Ser	Gly	Gly	Arg	Val	Arg	Lys
				165					170					175	

<210> 8506  
<211> 466  
<212> PRT  
<213> B.fragilis

&lt;400&gt; 8506

Asn	Asn	Ile	Asp	Met	Arg	Thr	Ile	Cys	Leu	Tyr	Phe	Glu	Ile	His	Gln
1				5					10					15	
Ile	Ile	His	Leu	Lys	Arg	Tyr	Arg	Phe	Phe	Asp	Ile	Gly	Ala	Asp	His
		20						25					30		
Tyr	Tyr	Tyr	Asp	Asp	Tyr	Ala	Asn	Glu	Thr	Gly	Ile	Asn	Glu	Val	Ala
		35					40					45			
Glu	Arg	Ser	Tyr	Ile	Pro	Ala	Leu	Asn	Thr	Leu	Ile	Glu	Met	Val	Lys
		50				55					60				
Asn	Ser	Gly	Gly	Ala	Phe	Lys	Val	Ala	Leu	Ser	Ile	Ser	Gly	Val	Ala
65				70					75						80
Leu	Glu	Gln	Leu	Glu	Ile	His	Ala	Pro	Ala	Val	Ile	Asp	Leu	Leu	His
			85					90					95		
Ile	Leu	Asn	Asp	Thr	Gly	Cys	Cys	Glu	Phe	Leu	Ala	Glu	Pro	Tyr	Ser
		100						105					110		
His	Gly	Leu	Ser	Ser	Leu	Ala	Asn	Glu	Asp	Cys	Phe	Arg	Glu	Glu	Val
		115					120					125			
Met	Arg	Gln	Ser	Glu	Lys	Met	Lys	Gln	Met	Phe	Gly	Lys	Ala	Pro	Lys
		130				135					140				
Val	Phe	Arg	Asn	Ser	Ser	Leu	Ile	Tyr	Ser	Asp	Glu	Ile	Gly	Ala	Thr
145					150					155					160

Val Ala Ser Met Gly Phe Lys Gly Met Leu Thr Glu Gly Ala Lys His  
 165 170 175  
 Val Leu Gly Trp Lys Ser Pro His Tyr Val Tyr His Cys Asn Gln Ala  
 180 185 190  
 Pro Ser Leu Lys Leu Leu Leu Arg Asp Phe Lys Leu Ser Asp Asp Ile  
 195 200 205  
 Ser Leu Arg Phe Ser Asn Ser Asp Trp Ser Glu Tyr Pro Leu Phe Ala  
 210 215 220  
 Asp Lys Phe Ile Gly Trp Ile Asp Ala Leu Pro Gln Glu Glu Gln Val  
 225 230 235 240  
 Ile Asn Ile Phe Met Glu Leu Lys Ala Leu Gly Met Ala Gln Pro Leu  
 245 250 255  
 Ser Ser Asn Ile Leu Glu Phe Leu Lys Ala Leu Pro Tyr Cys Ala Lys  
 260 265 270  
 Glu Lys Gly Ile Thr Phe Ser Thr Pro Ser Glu Ile Ile Ser Lys Leu  
 275 280 285  
 Lys Ser Val Ser Gln Leu Asp Val Pro Tyr Pro Met Ser Trp Val Asp  
 290 295 300  
 Glu Glu Arg Asp Thr Ser Ser Trp Leu Gly Asn Val Leu Gln Arg Glu  
 305 310 315 320  
 Ala Phe Ser Lys Leu Tyr Ser Val Ala Glu Arg Val His Leu Cys Asp  
 325 330 335  
 Asp Arg Arg Ile Lys Gln Asp Trp Asp Tyr Leu Gln Ala Ser Asn Asn  
 340 345 350  
 Phe Arg Phe Met Thr Thr Lys Asn Thr Gly Val Trp Leu Asn Arg Gly  
 355 360 365  
 Ile Tyr Asp Ser Pro Tyr Asp Ala Phe Thr Asn Tyr Met Asn Ile Leu  
 370 375 380  
 Gly Asp Phe Ile Lys Arg Val Asn Ser Leu Tyr Pro Glu Asp Ile Asp  
 385 390 395 400  
 Asn Glu Glu Leu Asn Ser Leu Leu Thr Thr Ile Lys Asn Gln Gly Glu  
 405 410 415  
 Glu Ile Ala Glu Leu His Lys Glu Val Asp Lys Leu Gln Ala Lys Ala  
 420 425 430  
 Glu Lys Ala Ala Lys Thr Val Lys Ala Glu Pro Lys Ala Ala Pro Lys  
 435 440 445  
 Lys Ala Ala Ala Lys Lys Pro Ala Ala Lys Lys Ala Thr Ala Lys Lys  
 450 455 460  
 Glu Asp  
 465

<210> 8507  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 8507  
 Gly Leu Thr Asp Ala Cys Lys Asn Ala Phe Ala Val Pro Leu Thr Lys  
 1 5 10 15  
 Glu Ala Thr Arg Lys Arg Gly Lys Leu Ser Trp Leu Ala Asp Gly Met  
 20 25 30  
 Tyr Lys Pro Lys Ala Thr Ala Asn Met Ala Asn Glu Ser Ala Met Val  
 35 40 45  
 Cys Leu Tyr Pro Ile Ala Leu Ile Val Ile Glu Ala Gly  
 50 55 60

<210> 8508  
 <211> 121  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8508

```

Val Ile Lys Asp His Pro Thr Glu Leu Thr Tyr Ile Tyr Leu Tyr Lys
1           5           10           15
Met Tyr Ala Ile Val Glu Ile Asn Gly Gln Gln Phe Lys Ala Glu Ala
          20           25           30
Gly Gln Lys Leu Phe Val His His Ile Gln Asn Ala Glu Asn Gly Ala
          35           40           45
Thr Val Glu Phe Asp Lys Val Leu Leu Val Asp Lys Asp Gly Asn Val
          50           55           60
Thr Val Gly Ala Pro Thr Val Asp Gly Ala Lys Val Val Cys Gln Ile
65           70           75           80
Val Ser Ser Leu Val Lys Gly Asp Lys Val Leu Val Phe His Lys Lys
          85           90           95
Arg Arg Lys Gly His Arg Lys Leu Asn Gly His Arg Gln Gln Phe Thr
          100          105          110
Glu Leu Thr Ile Thr Glu Val Val Ala
          115          120

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&lt;210&gt; 8509

&lt;211&gt; 158

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8509

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Lys Gly Arg Glu Gly Lys Lys Lys Arg Lys Glu Lys Glu Arg Lys Glu
1           5           10           15
Lys Glu Glu Glu Arg Arg Arg Glu Lys Gly Lys Glu Arg Lys Lys Glu
          20           25           30
Arg Glu Glu Arg Lys Lys Arg Glu Lys Glu Lys Glu Lys Arg Gly Arg
          35           40           45
Lys Arg Lys Arg Arg Gly Gly Arg Gly Lys Gly Lys Gly Gly Lys Lys
          50           55           60
Lys Glu Glu Arg Lys Glu Glu Lys Arg Arg Arg Lys Arg Lys Gly Arg
65           70           75           80
Glu Lys Lys Arg Arg Gly Lys Lys Gly Lys Glu Arg Glu Lys Glu Lys
          85           90           95
Lys Lys Gly Lys Gly Glu Arg Lys Lys Arg Lys Arg Gly Lys Lys Gly
          100          105          110
Lys Lys Lys Lys Glu Glu Glu Lys Gly Arg Lys Gly Lys Lys Gly Lys
          115          120          125
Lys Gly Glu Glu Gly Arg Arg Lys Lys Gly Arg Glu Gly Glu Gly Glu
          130          135          140
Gly Lys Arg Gly Gly Lys Arg Lys Arg Lys Lys Glu Glu Gly
145          150          155

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&lt;210&gt; 8510

&lt;211&gt; 599

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8510

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Leu Leu Met Glu Asn Leu Lys Asn Val Ala Pro Ile Glu Asp Phe Asn
1           5           10           15
Trp Asp Ala Tyr Glu Asn Gly Glu Ser Phe Ala Gly Ala Ser His Glu
          20           25           30
Glu Leu Glu Lys Ala Tyr Asp Gly Thr Leu Asn Lys Val Asn Asp Arg
          35           40           45

```

Glu Val Val Asp Gly Thr Val Ile Ala Met Asn Lys Arg Glu Val Val  
 50 55 60  
 Val Asn Ile Gly Tyr Lys Ser Asp Gly Ile Ile Pro Leu Asn Glu Phe  
 65 70 75 80  
 Arg Tyr Asn Pro Asp Leu Lys Val Gly Asp Thr Val Glu Val Tyr Ile  
 85 90 95  
 Glu Asn Gln Glu Asp Lys Lys Gly Gln Leu Val Leu Ser His Arg Lys  
 100 105 110  
 Ala Arg Ala Thr Arg Ser Trp Asp Arg Val Asn Ala Ala Leu Glu Asn  
 115 120 125  
 Glu Glu Ile Ile Lys Gly Tyr Ile Lys Cys Arg Thr Lys Gly Gly Met  
 130 135 140  
 Ile Val Asp Val Phe Gly Ile Glu Ala Phe Leu Pro Gly Ser Gln Ile  
 145 150 155 160  
 Asp Val Lys Pro Ile Arg Asp Tyr Asp Val Phe Val Gly Lys Thr Met  
 165 170 175  
 Glu Phe Lys Val Val Lys Ile Asn Gln Glu Phe Lys Asn Val Val Val  
 180 185 190  
 Ser His Lys Ala Leu Ile Glu Ala Glu Leu Glu Gln Gln Lys Lys Glu  
 195 200 205  
 Ile Ile Gly Lys Leu Glu Lys Gly Gln Val Leu Glu Gly Thr Val Lys  
 210 215 220  
 Asn Ile Thr Ser Tyr Gly Val Phe Ile Asp Leu Gly Gly Val Asp Gly  
 225 230 235 240  
 Leu Ile His Ile Thr Asp Leu Ser Trp Gly Arg Val Ser Asp Pro Lys  
 245 250 255  
 Glu Val Val Glu Leu Asp Gln Lys Leu Asn Val Val Ile Leu Asp Phe  
 260 265 270  
 Asp Asp Glu Lys Lys Arg Ile Ala Leu Gly Leu Lys Gln Leu Thr Pro  
 275 280 285  
 His Pro Trp Asp Ala Leu Asp Pro Asn Leu Gln Val Gly Asp Lys Val  
 290 295 300  
 Lys Gly Lys Val Val Val Met Ala Asp Tyr Gly Ala Phe Ile Glu Ile  
 305 310 315 320  
 Ala Pro Gly Val Glu Gly Leu Ile His Val Ser Glu Met Ser Trp Ser  
 325 330 335  
 Gln His Leu Arg Ser Ala Gln Asp Phe Met Lys Val Gly Asp Glu Val  
 340 345 350  
 Glu Ala Val Val Leu Thr Leu Asp Arg Glu Glu Arg Lys Met Ser Leu  
 355 360 365  
 Gly Ile Lys Gln Leu Lys Gln Asp Pro Trp Glu Thr Ile Glu Glu Lys  
 370 375 380  
 Tyr Pro Val Gly Ser Lys His Thr Ala Lys Val Arg Asn Phe Thr Asn  
 385 390 395 400  
 Phe Gly Val Phe Val Glu Ile Glu Glu Gly Val Asp Gly Leu Ile His  
 405 410 415  
 Ile Ser Asp Leu Ser Trp Thr Lys Lys Val Lys His Pro Ser Glu Phe  
 420 425 430  
 Thr Gln Ile Gly Ala Asp Ile Glu Val Gln Val Leu Glu Ile Asp Lys  
 435 440 445  
 Glu Asn Arg Arg Leu Ser Leu Gly His Lys Gln Leu Glu Glu Asn Pro  
 450 455 460  
 Trp Asp Val Phe Glu Thr Val Phe Thr Val Gly Ser Val His Glu Gly  
 465 470 475 480  
 Thr Ile Ile Glu Met Leu Asp Lys Gly Ala Val Val Ala Leu Pro Tyr  
 485 490 495  
 Gly Val Glu Gly Phe Ala Thr Pro Lys His Leu Val Lys Glu Asp Gly  
 500 505 510  
 Ser Gln Ala Gln Met Asp Glu Lys Leu Glu Phe Lys Val Ile Glu Phe

515	Asn Lys Asp Ala Lys Arg	520	Ile Ile Leu Ser His Ser	525	Arg Ile Phe Glu
530		535		540	
545	Asp Val Ala Lys Ala Glu Glu Arg Ala Glu Lys Lys Ala Ala Ser Asn	550		555	560
	Ala Lys Lys Ser Ser Lys Arg Glu Glu Thr Pro Ala Ile Gln Asn Gln	565		570	575
	Ala Ala Ser Thr Thr Leu Gly Asp Ile Asp Ala Leu Ala Ala Leu Lys	580		585	590
	Glu Gln Leu Glu Gly Lys Lys				
595					

<210> 8511  
 <211> 646  
 <212> PRT  
 <213> B.fragilis

<400> 8511

1	Ser Tyr Leu Cys Phe Arg Ser Lys Glu Thr Asn Ile Gln Met Lys Gln	10		15	
	Thr Pro Phe Arg Cys Leu Cys Leu Leu Leu Ile Leu Leu Gly Ala Val	20		25	30
	His Ser Arg Leu Ser Ala His Ala Asp Lys Thr Arg Glu Asp Val Leu	35		40	45
	Phe Leu Asn Ser Ile Asn Phe Asn Leu Pro Trp Ala Lys Asp Val Phe	50		55	60
	Trp Tyr Thr His Gln Ala Leu Gln Lys Lys Asn Ile Ser Val Lys Ala	65		70	75
	Glu Ser Leu Ser Val Pro Ala Leu Cys Asn Arg Lys Glu Ala Ala Ala	80		85	90
	Val Val Glu Gln Leu Arg Arg Lys Tyr Asp Val Pro Pro Arg Leu Ile	95		100	105
	Val Phe Ile Gly Asp Pro Gly Trp Ile Val Cys Arg Glu Leu Phe Asp	110		115	120
	Asp Val Trp Lys Asp Val Pro Val Ile Ile Thr Asn Ala Arg Asp Arg	125		130	135
	Leu Pro Ala Thr Leu Asp Ile Leu Leu Ser His Glu Glu Leu Thr Glu	140		145	150
	Ser Asn Thr Val Pro Ala Tyr Glu Trp Arg Lys Gly Tyr Asn Val Thr	155		160	165
	Thr Leu Gly Gln Val Tyr Tyr Val Lys Glu Thr Ile Gly Leu Met Arg	170		175	180
	Gln Leu Met Pro Asp Met Lys Arg Leu Ala Phe Ile Ser Asp Asp Arg	185		190	195
	Tyr Ile Ser Glu Ala Val Arg Gly Asp Val Glu Gln Ala Met Thr Gly	200		205	210
	Ser Phe Pro Glu Leu Ala Phe Glu Gln Leu Ser Thr Arg Asn Ile Ser	215		220	225
	Thr Glu Met Leu Leu Asp Thr Leu Lys Ser Tyr Asp Lys Thr Thr Gly	230		235	240
	Leu Ile Tyr Tyr Ser Trp Phe Glu Thr His Asn Gln Asp Asp Asn Asn	245		250	255
	Tyr Leu Phe Asp His Ile Gln Glu Ile Ile Thr Arg Phe Val His Ser	260		265	270
	Pro Leu Phe Leu Leu Ala Pro Glu Asp Leu Ser Asn Asn Thr Phe Ala	275		280	285
	Gly Gly Tyr Tyr Val Ser Val Glu Ser Phe Gly Asp Ser Leu Leu Gln	290		295	300
	Leu Ile His Arg Val Leu Glu Gly Glu Phe Pro Arg Asp Ile Pro Pro	305		310	315
					320



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<210> 8512
<211> 218
<212> PRT
<213> B.fragilis
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Ser 1	Ser	Thr	Cys	Met 5	Asp	Ser	Ile	His	Leu 10	Gln	Gln	Thr	Leu	Pro 15	Gln
Val	Phe	Ala	Asp 20	Arg	Asn	Ser	Ile	Thr 25	Ser	Asp	Val	Trp	His 30	Arg	Asn
Leu	Val	Phe 35	His	Lys	Gly	Lys	Ser 40	Tyr	Leu	Ile	Glu	Ala 45	Ala	Ser	Gly
Thr	Gly 50	Lys	Ser	Ser	Leu	Cys 55	Ser	Tyr	Ile	Tyr	Gly 60	Tyr	Arg	Asn	Asp
Tyr 65	Gln	Gly	Ile	Ile	Asn 70	Phe	Asp	Glu	Thr	Asn 75	Ile	Lys	Ala	Tyr	Pro 80
Val	Lys	Gln	Trp	Val	Glu	Ile	Arg	Lys	His	Ser	Leu	Ser	Met	Leu	Phe

			85					90					95		
Gln	Asp	Leu	Arg	Ile	Phe	Thr	Glu	Leu	Thr	Ala	Ile	Glu	Asn	Ile	Arg
			100							105			110		
Leu	Lys	Asn	Asn	Leu	Thr	Gly	Tyr	Lys	Thr	Arg	Lys	Glu	Val	Leu	Ser
		115					120					125			
Leu	Phe	Glu	Ala	Leu	Gly	Leu	Ser	Asp	Lys	Leu	Asn	Val	Lys	Ala	Gly
	130					135					140				
Lys	Leu	Ser	Phe	Gly	Gln	Gln	Arg	Val	Ala	Phe	Ile	Arg	Ser	Leu	
145				150					155					160	
Cys	Gln	Pro	Phe	Asp	Phe	Ile	Phe	Leu	Asp	Glu	Pro	Ile	Ser	His	Leu
			165						170				175		
Asp	Asp	Asn	Asn	Ala	Arg	Ile	Met	Gly	Glu	Leu	Val	Met	Glu	Glu	Ala
		180						185					190		
Ser	Lys	Gln	Gly	Ala	Gly	Ile	Ile	Val	Thr	Ser	Ile	Gly	Lys	His	Ile
	195					200						205			
Glu	Leu	Thr	Tyr	Asp	Arg	Ile	Leu	Lys	Leu						
	210					215									

<210> 8513  
 <211> 740  
 <212> PRT  
 <213> B.fragilis

<400> 8513

Tyr	Leu	Arg	Cys	Asn	Ile	Leu	Ile	Trp	Cys	Phe	Trp	Leu	Phe	Ser	Leu
1				5					10					15	
Cys	Phe	Val	Gln	Lys	Gly	Val	Ala	Asn	Val	Val	Leu	Asp	Pro	Gln	Thr
			20					25					30		
Asn	Arg	Pro	Ile	Ser	Ala	Asp	Ser	Ile	Leu	Asn	Asn	Val	Met	Thr	Phe
		35				40						45			
Ala	Pro	Phe	Tyr	Glu	Lys	Leu	Val	Thr	Asp	Tyr	Arg	Ala	Asp	Leu	Tyr
	50					55					60				
Ile	Lys	Gly	Thr	Met	Asp	Ile	Lys	Arg	Lys	Asn	Phe	Ile	Leu	Arg	Tyr
65				70						75				80	
Val	Pro	Ser	Met	Phe	Arg	Leu	Gln	Lys	Gly	Val	Arg	Gln	Tyr	Met	Val
			85						90					95	
Glu	Thr	Tyr	Ser	Asp	Leu	His	Phe	Thr	Ala	Pro	Asn	Ile	Tyr	Asp	Gln
		100						105					110		
Lys	Val	Lys	Ala	Ser	Met	Gly	Thr	Val	His	Asn	Ser	Arg	Gly	Val	Pro
	115					120						125			
Gly	Met	Leu	Glu	Tyr	Phe	Asn	Ile	Asn	Leu	Tyr	Ser	Ser	Thr	Leu	Leu
	130					135					140				
Tyr	Asp	Arg	Leu	Leu	Ser	Pro	Leu	Ala	Lys	Asn	Gly	Arg	Lys	Tyr	Tyr
145				150						155				160	
Lys	Tyr	Leu	Ile	Asp	Ser	Ile	Met	Gly	Gly	Thr	Asp	Asn	Arg	Gln	Tyr
			165						170					175	
Lys	Ile	Arg	Phe	Ile	Pro	Arg	Ser	Lys	Ser	Asp	Gln	Leu	Val	Gly	Gly
		180						185					190		
Tyr	Met	Ile	Val	Ser	Ser	Asp	Val	Trp	Ser	Val	Arg	Glu	Ile	Arg	Phe
	195					200						205			
Ser	Gly	Arg	Ser	Glu	Leu	Leu	Phe	Ser	Cys	Leu	Ile	Lys	Met	Gly	
	210				215					220					
Ser	Val	Gly	Lys	Asp	Asp	Glu	Phe	Leu	Pro	Val	Ser	Tyr	Asn	Val	Glu
225				230						235				240	
Gly	Gln	Phe	Asn	Phe	Leu	Gly	Asn	Arg	Ile	Asn	Gly	Val	Tyr	Val	Ala
			245						250					255	
Ser	Leu	Asn	Tyr	His	Asp	Ile	Val	Leu	Glu	Glu	Asn	Gln	Asn	Lys	Trp
	260					265						270			
Lys	Glu	Lys	Val	Arg	Ala	Arg	Ile	Lys	Gly	Lys	Ser	Lys	Tyr	Asp	Leu

275	280	285
Ser Asp Ser Tyr Asn Leu Gln Cys Glu Thr Thr	Ser Phe His Thr Asp	
290	295	300
Ser Ala Tyr Phe Glu Thr Leu Arg Pro Ile Pro	Leu Ser Glu Ala Glu	
305	310	315
Arg Arg Leu Tyr Lys Glu Asp Ala Leu Arg Lys	Asp Thr Ile Gln Arg	
325	330	335
Asn Ile Lys Pro Lys Ser Lys Ser Gln Val Phe	Trp Gly Gln Val Gly	
340	345	350
Asp Val Leu Ile Ser Asp Tyr Lys Leu Asn Leu	Ser Asn Leu Gly Ser	
355	360	365
Val Lys Cys Ser Pro Leu Ile Asn Pro Phe Leu	Leu Ser Tyr Ser Gly	
370	375	380
Ser Asn Gly Leu Ser Tyr Arg Gln Ser Phe Lys	Tyr Asn Arg Leu Phe	
385	390	395
Lys His Asp Arg Leu Leu Arg Val Val Pro Lys	Leu Gly Tyr Asn Phe	
405	410	415
Thr Arg Lys Glu Phe Tyr Trp Ser Val Asn Thr	Glu Phe Asn Tyr Leu	
420	425	430
Pro Glu Lys Met Gly Ala Val His Ile Asp Phe	Gly Asn Gly Asn Arg	
435	440	445
Ile Tyr Ser Ser Asp Val Leu Asp Asp Leu Lys	Ala Ile Pro Asp Ser	
450	455	460
Val Phe Asp Phe Asn Gln Ile His Leu Asp Tyr	Phe Tyr Asp Leu Tyr	
465	470	475
Phe Asn Phe Arg His Ser Ile Glu Ile Ile Asn	Gly Leu Glu Leu Ser	
485	490	495
Val Gly Leu Ser Thr His Arg Arg Lys Ala Val	Lys Ser Ser Lys Leu	
500	505	510
Val Pro Leu Thr Lys Ser Arg Glu Thr Leu Asn	Glu Asp Ile Gln Asn	
515	520	525
Lys Ile Arg Asn Thr Tyr Leu Ser Phe Ala Pro	Arg Val Arg Leu Glu	
530	535	540
Trp Thr Pro Cys Leu Tyr Tyr Tyr Met Asn Gly	His Arg Lys Ile Asn	
545	550	555
Leu Arg Ser Lys Tyr Pro Thr Phe Ser Ile Asp	Trp Glu Arg Gly Ile	
565	570	575
Lys Gly Val Phe Gly Ser Thr Gly Gln Tyr Glu	Arg Leu Glu Phe Asp	
580	585	590
Leu Gln His Ile Pro Leu Gly Leu Met Arg Asn	Ile Tyr Tyr Arg	
595	600	605
Phe Gly Phe Gly Met Phe Thr Asn Gln Lys Glu	Met Tyr Phe Val Asp	
610	615	620
Phe Asn Asn Phe Thr Arg Ser Asn Leu Pro Glu	Gly Trp Asn Asp Glu	
625	630	635
Ile Gly Gly Val Phe Gln Leu Leu Asp Arg Arg	Trp Tyr Asn Ala Ser	
645	650	655
Arg Lys Tyr Ile Arg Gly His Phe Thr Tyr Glu	Ala Pro Phe Leu Leu	
660	665	670
Leu Lys His Leu Ile Lys Tyr Thr Arg Tyr Val	Gln Asn Glu Arg Leu	
675	680	685
Tyr Ala Ser Ile Leu Ser Val Pro His Leu Gln	Pro Tyr Val Glu Leu	
690	695	700
Gly Tyr Gly Ile Gly Thr His Ile Phe Asp Phe	Gly Val Phe Val Gly	
705	710	715
Ser Glu Asn Trp Lys Tyr Thr Glu Val Gly Cys	Lys Phe Thr Phe Glu	
725	730	735
Leu Phe Asn Arg		
740		

<210> 8514  
 <211> 320  
 <212> PRT  
 <213> B.fragilis

<400> 8514

Asn	Ile	Asn	Arg	Ser	Met	Glu	Thr	Glu	Arg	Ile	Lys	Cys	Leu	Ile	Ile
1				5					10					15	
Gly	Ser	Gly	Pro	Ala	Gly	Tyr	Thr	Ala	Ile	Tyr	Ala	Gly	Arg	Ala	
			20					25				30			
Asn	Leu	Ser	Pro	Val	Leu	Tyr	Glu	Gly	Ile	Gln	Pro	Gly	Gly	Gln	Leu
		35					40					45			
Thr	Thr	Thr	Thr	Asp	Val	Glu	Asn	Phe	Pro	Gly	Tyr	Pro	Gln	Gly	Ile
	50					55					60				
Ser	Gly	Pro	Gln	Leu	Met	Glu	Asp	Leu	Arg	Thr	Gln	Ala	Glu	Arg	Phe
65					70				75					80	
Gly	Ala	Asp	Ile	Arg	Phe	Gly	Ile	Ala	Thr	Ala	Ser	Asp	Leu	Gly	Gln
				85				90					95		
Ala	Pro	Tyr	Lys	Ile	Thr	Ile	Asp	Gly	Glu	Lys	Val	Ile	Glu	Ala	Asp
			100					105					110		
Ser	Leu	Ile	Ile	Ala	Thr	Gly	Ala	Thr	Ala	Lys	Tyr	Leu	Gly	Leu	Asp
		115					120						125		
Asp	Glu	Lys	Lys	Tyr	Ala	Gly	Met	Gly	Val	Ser	Ala	Cys	Ala	Thr	Cys
	130					135					140				
Asp	Gly	Phe	Phe	Tyr	Arg	Lys	Lys	Val	Val	Ala	Val	Val	Gly	Gly	Gly
145					150				155					160	
Asp	Thr	Ala	Cys	Glu	Glu	Ala	Ile	Tyr	Leu	Ala	Gly	Leu	Ala	Ser	Lys
				165				170						175	
Val	Tyr	Leu	Val	Val	Arg	Lys	Pro	Tyr	Leu	Arg	Ala	Ser	Lys	Ile	Met
			180					185					190		
Gln	Glu	Arg	Val	Arg	Lys	His	Asp	Lys	Ile	Glu	Val	Leu	Phe	Glu	His
		195					200					205			
Asn	Val	Val	Gly	Leu	Phe	Gly	Glu	Asn	Gly	Val	Glu	Gly	Met	Asn	Leu
	210					215					220				
Val	Lys	Arg	Trp	Glu	Glu	Pro	Asp	Glu	Glu	Arg	Tyr	Ser	Leu	Pro	Ile
225				230						235				240	
Asp	Gly	Phe	Phe	Leu	Ala	Ile	Gly	His	Lys	Pro	Asn	Ser	Asp	Ile	Phe
				245					250					255	
Lys	Pro	Tyr	Leu	Asp	Thr	Asp	Glu	Val	Gly	Tyr	Ile	Thr	Thr	Asp	Gly
			260				265						270		
Asp	Ser	Pro	Arg	Thr	Lys	Val	Pro	Gly	Val	Phe	Ala	Ala	Gly	Asp	Val
		275					280					285			
Ala	Asp	Pro	His	Tyr	Arg	Gln	Ala	Ile	Thr	Ala	Ala	Gly	Ser	Gly	Cys
	290					295					300				
Lys	Ala	Ala	Ile	Glu	Ala	Glu	Arg	Tyr	Leu	Ser	Glu	Lys	Gly	Leu	Ile
305					310					315				320	

<210> 8515  
 <211> 237  
 <212> PRT  
 <213> B.fragilis

<400> 8515

Cys	Lys	Ser	Ser	Lys	Lys	Lys	Asn	Phe	Ile	Gly	Leu	Pro	Thr	Thr	Phe
1				5					10					15	
Ser	Tyr	Leu	Cys	Val	Ser	Ile	Gln	Ala	Asp	Met	Lys	Lys	Glu	Ser	Gln
		20						25				30			
Val	Ile	Phe	Asp	Lys	Asn	Val	Ile	Glu	Phe	Val	Thr	Val	Ala	Ala	Glu

[illegible]

<400> 8516

Gly 1	Glu	Arg	Arg	Glu 5	Lys	Glu	Glu	Lys	Gly 10	Glu	Arg	Lys	Lys	Arg	Lys
Gly	Gly	Gly	Lys	Lys 20	Lys	Arg	Lys	Arg	Glu 25	Arg	Lys	Lys	Lys	Arg	Glu
Arg	Gly	Lys	Lys	Lys 35	Glu	Arg	Glu	Arg	Lys 40	Arg	Glu	Lys	Gly	Glu	Lys
Lys	Lys	Lys	Lys	Arg 50	Gly	Lys	Arg	Lys	Gly 55	Glu	Arg	Gly	Lys	Glu	Glu
Gly	Gly	Lys	Glu	Arg 65	Gly	Lys	Glu	Lys	Lys 70	Glu	Lys	Glu	Gly	Lys	Gly
Lys	Glu	Lys	Lys	Arg 85	Glu	Lys	Arg	Glu	Gly 90	Lys	Arg	Lys	Gly	Glu	Lys
Lys	Arg	Lys	Gly	Arg 100	Glu	Glu	Lys	Lys	Lys 105	Lys	Gly	Glu	Lys	Arg	Lys
Lys	Lys	Glu	Arg	Arg 115	Arg	Glu	Arg	Lys	Lys 120	Arg	Glu	Glu	Arg	Lys	Lys
Arg	Arg	Arg	Gly	Lys 130	Lys	Glu	Lys	Arg	Glu 135	Arg	Arg	Gly	Gly	Arg	Gly
Lys	Glu	Arg	Arg	Glu 145	Glu	Lys	Lys	Glu	Glu 150	Gly	Gly	Gly	Ile	Arg	Arg
Lys	Arg	Arg	Gly	Lys 165	Glu	Gly	Arg	Lys	Gly 170	Lys	Glu	Arg	Glu	Glu	Gly
Glu	Lys	Glu	Gly	Lys 180	Arg	Lys	Glu	Arg	Lys 185	Glu	Lys	Glu	Glu	Lys	Arg
Lys	Gly	Glu	Lys	Lys 195	Arg	Arg	Arg	Lys	Gly 200	Lys	Gly	Glu	Glu	Lys	Lys
Glu	Glu	Glu	Lys	Gly 205	Gly	Glu	Gly	Glu	Lys	Glu	Lys	Glu	Gly	Arg	Glu

210		215		220
Gly Arg Glu Lys Glu Lys Gly Gly Glu Glu Lys Gly Glu Gly Glu Gly				
225		230		240
Glu Gly Arg Arg Glu Gly Gly Lys Arg Arg Lys Arg Arg Glu Arg Lys				
	245		250	255
Lys Lys Lys Lys Lys Lys Asn Asn Lys Lys Lys Lys Glu Lys Lys His				
	260		265	270
Pro His Val Ser Thr Pro Lys Val Tyr Ala Ser Arg Thr Glu Ser Thr				
	275		280	285
Glu Lys Thr Ile Thr Asn Leu Lys Asp Lys Ser Ile Cys Leu				
290		295		300

<210> 8517  
 <211> 176  
 <212> PRT  
 <213> B.fragilis

<400> 8517
Arg Asp Val Gly Asp Ile Arg His Phe Ser Arg Ser Phe Glu Ser Phe
1 5 10 15
Leu Pro Ser Cys Arg Glu Lys Asn Arg Glu Val Phe Gly Arg Gly Gln
20 25 30
Leu Asn Leu Leu Ile Cys Thr Met Ser Lys Lys Lys Arg Gly Glu Glu
35 40 45
Arg Met Lys Glu Glu Asp Asn Ile Leu Lys Lys Val Gly Lys Lys Asn
50 55 60
Ser Phe Lys Val Pro Glu Gly Tyr Phe Glu Asn Leu Thr Ser Glu Val
65 70 75 80
Met Gly Lys Leu Pro Glu Lys Glu Gly Pro Ala Phe Glu Glu Val Lys
85 90 95
Gln Pro Thr Met Trp Ile Arg Met Lys Pro Leu Leu Tyr Met Ala Ala
100 105 110
Met Phe Ile Gly Ala Ala Leu Ile Ile Arg Val Ala Ser Ser Asn His
115 120 125
Gln Pro Thr Thr Ala Gly Asp His Leu Thr Ala Asn Glu Ala Ala Thr
130 135 140
Glu Val Val Ser Asp Glu Tyr Ile Asp Val Ala Leu Asp Arg Ser Met
145 150 155 160
Leu Asp Asp Tyr Ser Leu Tyr Val Tyr Leu Ser Asp Ala Thr Ala Glu
165 170 175

<210> 8518  
 <211> 74  
 <212> PRT  
 <213> B.fragilis

<400> 8518
Gly Ser Asn Gly Leu Tyr Ile Pro Thr Leu Lys Lys Gln Ile Ile Asn
1 5 10 15
His Thr Phe Ala Gly Leu Phe Leu Thr Phe Ser His Leu Tyr Asn Arg
20 25 30
Ser Lys Ser Phe Gly Ile Asp Arg Phe Leu Phe Tyr Arg Pro Phe Ile
35 40 45
Leu Cys Phe Phe Arg Phe Ser Phe Pro Ile Phe Leu Phe Ser Phe Pro
50 55 60
Phe Ile Pro Cys Phe Phe His Ser Val Asn
65 70

<210> 8519

<211> 133  
 <212> PRT  
 <213> B.fragilis

<400> 8519

Gly	Glu	Lys	Gly	Glu	Glu	Arg	Lys	Glu	Gly	Arg	Glu	Lys	Lys	Gly	Lys
1				5					10					15	
Lys	Glu	Lys	Arg	Arg	Gly	Lys	Gly	Lys	Gly	Lys	Lys	Arg	Lys	Arg	
			20					25				30			
Lys	Gly	Lys	Gly	Lys	Lys	Lys	Gly	Glu	Glu	Arg	Gly	Lys	Gly	Arg	Lys
			35				40					45			
Lys	Lys	Arg	Lys	Lys	Lys	Gly	Gly	Lys	Gly	Lys	Lys	Lys	Lys	Arg	Glu
			50			55					60				
Glu	Lys	Glu	Glu	Arg	Lys	Arg	Arg	Gly	Gly	Arg	Arg	Arg	Glu	Lys	Gly
65					70					75				80	
Lys	Gly	Arg	Glu	Glu	Glu	Arg	Gly	Glu	Lys	Glu	Glu	Lys	Glu	Glu	Lys
				85				90						95	
Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Ile	Thr	Lys	Lys	Lys	Lys	Lys	Lys
			100					105					110		
Asn	Thr	Pro	Met	Ser	Ala	Leu	Leu	Lys	Ser	Met	Leu	Pro	Val	Gln	Arg
			115				120					125			
Val	Gln	Arg	Lys	Arg											
			130												

<210> 8520

<211> 431

<212> PRT

<213> B.fragilis

<400> 8520

Phe	Ile	Gly	Gly	Gly	Thr	Lys	Met	Lys	Val	Leu	Met	Phe	Gly	Trp	Glu
1				5					10					15	
Phe	Pro	Pro	His	Ile	Leu	Gly	Gly	Leu	Gly	Thr	Ala	Ser	Tyr	Gly	Leu
			20					25					30		
Thr	Lys	Gly	Met	Ser	Gln	Gln	Glu	Asp	Met	Glu	Ile	Thr	Phe	Cys	Ile
			35				40					45			
Pro	Lys	Pro	Trp	Gly	Asp	Glu	Asp	Gln	Ser	Phe	Leu	Arg	Ile	Ile	Gly
			50			55					60				
Met	Asn	Ser	Thr	Pro	Ile	Val	Trp	Arg	Asp	Val	Asp	Trp	Glu	Tyr	Val
65					70				75					80	
Lys	Gly	Arg	Val	Gly	Ser	Tyr	Met	Asp	Pro	Gln	Leu	Tyr	Phe	Asp	Leu
				85				90						95	
Arg	Asp	His	Ile	Tyr	Ala	Asp	Phe	Asn	Tyr	Leu	Asn	Ala	Asn	Asp	Leu
			100					105					110		
Gly	Cys	Ile	Glu	Phe	Ser	Gly	Arg	Tyr	Pro	Asp	Asn	Leu	His	Glu	Glu
			115				120					125			
Ile	Asn	Asn	Tyr	Ser	Ile	Val	Ala	Gly	Val	Ile	Ala	Arg	Gln	Gln	Glu
			130			135					140				
Phe	Glu	Ile	Ile	His	Ser	His	Asp	Trp	Leu	Thr	Tyr	Pro	Ala	Gly	Ile
145				150						155				160	
His	Ala	Lys	Gln	Val	Ser	Gly	Lys	Pro	Leu	Val	Ile	His	Val	His	Ala
			165						170					175	
Thr	Asp	Phe	Asp	Arg	Ser	Arg	Gly	Asn	Val	Asn	Pro	Thr	Val	Tyr	Ala
			180					185						190	
Ile	Glu	Lys	Asn	Gly	Met	Asp	His	Ala	Asp	His	Ile	Met	Cys	Val	Ser
			195			200					205				
Glu	Leu	Thr	Arg	Gln	Thr	Val	Ile	His	Lys	Tyr	Phe	Gln	Asp	Pro	Lys
			210			215					220				
Lys	Val	Ser	Thr	Val	His	Asn	Ala	Val	Ser	Pro	Leu	Ser	Gln	Glu	Ile

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

225		230		235		240
Gln Asp Ile Val	Pro Asn Lys Asn Pro	Lys Glu Lys Val	Val Thr Phe			
	245	250	255			
Leu Gly Arg Ile	Thr Met Gln Lys Gly	Pro Glu Tyr Phe	Val Glu Ala			
	260	265	270			
Ala Ala Met Val	Leu Gln Arg Thr Arg	Asn Val Arg Phe	Val Met Ala			
	275	280	285			
Gly Ser Gly Asp	Met Met Asp Gln Met	Ile Arg Leu Ala	Ala Glu Arg			
	290	295	300			
Gly Ile Ala Asp	Arg Phe His Phe Pro	Gly Phe Met Lys	Gly Lys Gln			
305	310	315	320			
Val Tyr Glu Val	Leu Lys Ala Ser Asp	Val Tyr Ile Met	Pro Ser Val			
	325	330	335			
Ser Glu Pro Phe	Gly Ile Ser Pro Leu	Glu Ala Met Gln	Cys Ser Val			
	340	345	350			
Pro Ser Ile Ile	Ser Lys Gln Ser Gly	Cys Ala Glu Ile	Leu Glu Lys			
	355	360	365			
Cys Ile Lys Thr	Asp Tyr Trp Asp Ile	His Ala Met Ala	Asp Ala Ile			
	370	375	380			
Tyr Ser Ile Cys	Thr Tyr Pro Ala Met	Tyr Glu Tyr Leu	Arg Asp Glu			
385	390	395	400			
Gly Lys Lys Glu	Val Asp Glu Ile Lys	Trp Glu Asn Val	Gly Tyr Lys			
	405	410	415			
Val Arg Gly Ile	Tyr Asp Glu Val Ile	Lys Asn Tyr Gly	Lys Gln			
	420	425	430			

<210> 8521  
 <211> 819  
 <212> PRT  
 <213> B.fragilis

<400> 8521

His Thr Phe Ile	Thr Met Lys Lys Gly	Ile Thr Leu Phe	Leu Leu Ser
1	5	10	15
Leu Leu Phe Ile	Thr Pro Gly Cys Lys	Gln Ser Lys Glu	Thr Ile Val
	20	25	30
Asn Glu Tyr Asn	Ile Val Pro Leu Pro	Asn Gln Met Ile	Pro Gln Gln
	35	40	45
Gly Arg Phe Glu	Ile Ser Lys Lys Val	Arg Val Ile Thr	Thr Ala Cys
	50	55	60
Thr Pro Asp Val	Gln Ile Ile Ala Asp	Ser Leu Ile Asn	Arg Leu Lys
65	70	75	80
Leu Thr Ser Gly	Ile Thr Ile Lys Gln	Thr Phe Glu Asn	Val Thr Asp
	85	90	95
Glu Pro Val Ile	Arg Phe Val Pro Gln	Asp Gly Met Pro	Glu Glu Gly
	100	105	110
Tyr Lys Leu Ser	Val Thr Pro Gln Asn	Ile Thr Leu Thr	Ala Ser Thr
	115	120	125
Pro Lys Gly Phe	Phe Tyr Ala Val Gln	Thr Leu Tyr Gln	Leu Leu Pro
	130	135	140
Pro Val Val Tyr	Gly Asn Gln Lys Val	Lys Asn Ala Glu	Trp Ser Val
145	150	155	160
Pro Ala Val Glu	Ile Glu Asp Ala Pro	Arg Phe Ala Tyr	Arg Gly Leu
	165	170	175
Met Leu Asp Val	Cys Arg His Phe Ser	Pro Val Glu Tyr	Ile Tyr Lys
	180	185	190
Phe Ile Asp Met	Leu Ala Met His Lys	Met Asn Thr Phe	His Trp His
	195	200	205
Leu Thr Asp Asp	Gln Gly Trp Arg Ile	Glu Ile Lys Lys	Tyr Pro Lys



210	215	220
Leu Thr Glu Ile Gly	Ser Lys Arg Lys Glu Thr	Leu Val Asp Tyr Tyr
225	230	235
Tyr Val Asn Tyr Pro	Gln Val Phe Asp Gly Lys	Glu His Gly Gly Tyr
245	250	255
Tyr Thr Gln Glu Gln	Ile Arg Ala Ile Val Asp	Tyr Ala Ala Ser Lys
260	265	270
Phe Ile Thr Val Ile	Pro Glu Ile Glu Met Pro	Gly His Ala Ile Ala
275	280	285
Ala Ile Ala Ser Tyr	Pro Glu Leu Ser Cys Thr	Pro Asp Ser Thr Cys
290	295	300
Asp Val Thr Gly Thr	Trp Gly Val Phe Glu Gln	Val Phe Cys Pro Ser
305	310	315
Asp Thr Thr Phe Gln	Phe Leu Glu Gly Val Met	Asp Glu Val Met Asp
325	330	335
Leu Phe Pro Ser Lys	Tyr Ile His Ile Gly Gly	Asp Glu Cys Pro Lys
340	345	350
Thr Ala Trp Ile Asn	Ser Glu Tyr Cys Gln Ser	Leu Ile Lys Gln Leu
355	360	365
Gly Leu Lys Asp Asp	Val Thr Pro Asn Val Ile	Asp Gly Lys Lys His
370	375	380
Thr Lys Glu Glu Lys	Leu Gln Ser Tyr Phe Ile	Thr Arg Met Glu Lys
385	390	395
Tyr Leu Asn Ser Lys	Gly Arg Asn Ile Ile Gly	Trp Asp Glu Ile Leu
405	410	415
Glu Gly Gly Leu Ala	Pro Asn Ala Thr Val Met	Ser Trp Arg Gly Val
420	425	430
Glu Gly Gly Leu Asn	Ala Ala Lys Ala Gly His	Asn Ala Ile Met Thr
435	440	445
Pro Asn Pro Tyr Ala	Tyr Leu Asp Gln Tyr Gln	Glu Glu Pro Glu Ile
450	455	460
Ala Pro Val Thr Ile	Gly Gly Tyr Asn Thr Leu	Lys Lys Thr Tyr Ser
465	470	475
Tyr Asn Pro Val Pro	Asp Asp Ala Asn Glu Leu	Val Lys Lys His Ile
485	490	495
Ile Gly Val Gln Gly	Asn Ile Trp Thr Glu Tyr	Met Pro Gly Asn Asp
500	505	510
Asn Arg Asp Tyr Gln	Ala Phe Pro Arg Ala Val	Ala Ile Ala Glu Thr
515	520	525
Gly Trp Thr Leu Asn	Ala Asn Lys Asn Trp Asn	Asn Phe Cys Gln Arg
530	535	540
Met Val Glu Asp Phe	Arg Arg Met Asp Val Lys	Asn Val Lys Ala Cys
545	550	555
Arg Asn Phe Phe Asp	Val Asn Ile Asn Thr His	Val Asp Glu Thr Asn
565	570	575
Thr Leu Lys Val Val	Leu Glu Ser Phe Tyr Pro	Asn Ala Glu Ile His
580	585	590
Tyr Thr Thr Asn Gly	Ser Val Pro Thr Val Glu	Ser Ala Ile Tyr Asn
595	600	605
Gln Pro Phe Ala Leu	Ser Gly Glu Met Asp Val	Lys Ala Ala Ala Phe
610	615	620
Lys Asp Gly Lys Met	Leu Gly Lys Val Ser Gly	Lys Lys Leu Tyr Gly
625	630	635
Asn Leu Ile Ser Gly	Lys Ser Phe Thr Val Thr	Pro Pro Ile Gly Ala
645	650	655
Ala Lys Gly Asp Ile	Leu Gly Glu Asn Asp Val	Leu Gly Thr Asp Ile
660	665	670
Ser Thr Phe Gly Leu	Thr Asn Gly Lys Arg Gly	Asn Ile Ala Ser Met
675	680	685

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Thr Pro Trp Ser Gly Phe Arg Met Asn Asp Ala Cys Asn Lys Leu Val  
 690 695 700  
 Phe Ile Val Glu Phe Glu Gln Pro Thr Thr Val Ser Lys Val Val Phe  
 705 710 715 720  
 Gly Ser Leu Tyr Asn Pro Ala Ser Val Ile Leu Pro Pro Ser Val Ala  
 725 730 735  
 Thr Val Glu Thr Ser Ser Asp Gly Arg Lys Tyr Asp Lys Met Ala Glu  
 740 745 750  
 Ala Ser Phe Lys Arg Asn Tyr Pro Glu Arg Gly Arg Lys Ala Phe Thr  
 755 760 765  
 Asp Thr Leu Gly Phe Ala Pro Lys Glu Val Lys Tyr Ile Lys Ile Thr  
 770 775 780  
 Leu Gln Asn Gly Gly Thr Leu Arg Asn Gly Ile Asp Phe Val Lys Asp  
 785 790 795 800  
 Pro Asn Glu Lys Asp Val Val Gln Ala Asn Ile Tyr Leu Asp Glu Ile  
 805 810 815  
 Glu Val Tyr

&lt;210&gt; 8522

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8522

Tyr Thr Pro Ile Phe Ile Gly Val Phe Cys Lys Ile Asn Met Phe Phe  
 1 5 10 15  
 Leu Cys Thr Pro Leu Phe Val Cys Gly Arg Lys Asn Phe Phe Val Tyr  
 20 25 30  
 Phe Thr Tyr Pro Glu Ile Thr Ile Lys Tyr Glu Phe Ile Ser Arg Ile  
 35 40 45  
 Ile Gly Phe Phe Leu Tyr Leu Pro Ser Ile Arg Arg Leu Val Phe Glu  
 50 55 60  
 Val Gln Tyr Ile Asn Met Val Phe Leu Val Ile Leu Ala Leu Phe Cys  
 65 70 75 80  
 Ser Lys Gly Ser Gly  
 85

&lt;210&gt; 8523

&lt;211&gt; 649

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8523

Cys Thr Thr Met Ser Tyr Leu His Phe Asp Lys Thr Leu Met Ile Asn  
 1 5 10 15  
 Leu Glu Glu Ser Leu Pro Arg Glu Ile Leu Arg Thr Asn Lys Ser Gly  
 20 25 30  
 Ala Tyr His Cys Thr Thr Ile Val Asp Cys Asn Thr Arg Lys Tyr His  
 35 40 45  
 Gly Leu Leu Val Ile Pro Val Pro Asn Leu Asp Asp Glu Asn His Val  
 50 55 60  
 Leu Leu Ser Ser Leu Asp Glu Thr Val Ile Gln His Gly Ala Glu Phe  
 65 70 75 80  
 Asn Leu Gly Leu His Lys Tyr Gln Gly Asn His Phe Ser Pro Asn Gly  
 85 90 95  
 His Lys Tyr Ile Arg Glu Phe Asp Cys Glu His Ile Pro Ala Thr Thr  
 100 105 110  
 Tyr Arg Val Gly Gly Val Ile Leu Arg Lys Glu Lys Ile Phe Val His

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

Val Glu Arg Gln Leu Ile Gly Leu Glu Asp Glu Met Thr Ser His Cys  
 595 600 605  
 Val Gly Ser Leu Pro Glu Leu Phe Asp Gly Asn Pro Pro Phe Lys Gly  
 610 615 620  
 Arg Gly Ala Val Ser Phe Ala Met Asn Val Ala Glu Ile Leu Arg Ile  
 625 630 635 640  
 Leu Lys Leu Leu Ser Lys Tyr Asn Leu  
 645

<210> 8524  
 <211> 745  
 <212> PRT  
 <213> B.fragilis

<400> 8524

Lys Lys His Ile Ile Leu Cys Pro Thr Thr Asn Lys Arg Asp Thr Ile  
 1 5 10 15  
 Met Ser Lys Met Arg Phe Phe Ala Leu Gln Glu Leu Ser Asn Arg Lys  
 20 25 30  
 Pro Leu Glu Ile Thr Thr Pro Ser Asn Lys Leu Ser Asp Tyr Tyr Ala  
 35 40 45  
 Ser His Val Phe Asp Arg Lys Lys Met Gln Glu Tyr Leu Pro Lys Glu  
 50 55 60  
 Ala Tyr Lys Ala Val Val Asp Ala Thr Glu Lys Gly Thr Pro Ile Ser  
 65 70 75 80  
 Arg Glu Met Ala Asp Leu Ile Ala Asn Gly Met Lys Ser Trp Ala Lys  
 85 90 95  
 Ser Leu Asn Val Thr His Tyr Thr His Trp Phe Gln Pro Leu Thr Asp  
 100 105 110  
 Gly Thr Ala Glu Lys His Asp Gly Phe Ile Glu Phe Gly Glu Asp Gly  
 115 120 125  
 Glu Val Ile Glu Arg Phe Ser Gly Lys Leu Leu Ile Gln Gln Glu Pro  
 130 135 140  
 Asp Ala Ser Ser Phe Pro Asn Gly Gly Ile Arg Asn Thr Phe Glu Ala  
 145 150 155 160  
 Arg Gly Tyr Thr Ala Trp Asp Val Ser Ser Pro Ala Phe Val Val Asp  
 165 170 175  
 Thr Thr Leu Cys Ile Pro Thr Ile Phe Ile Ser Tyr Thr Gly Glu Ala  
 180 185 190  
 Leu Asp Tyr Lys Thr Pro Leu Leu Lys Ala Leu Ala Val Asp Lys  
 195 200 205  
 Ala Ala Thr Glu Val Cys Gln Leu Phe Asp Lys Asn Ile Thr Arg Val  
 210 215 220  
 Phe Thr Asn Leu Gly Trp Glu Gln Glu Tyr Phe Leu Val Asp Thr Ser  
 225 230 235 240  
 Leu Tyr Asn Ala Arg Pro Asp Leu Arg Leu Thr Gly Arg Thr Leu Met  
 245 250 255  
 Gly His Ser Ser Ala Lys Asp Gln Gln Leu Glu Asp His Tyr Phe Gly  
 260 265 270  
 Ser Ile Pro Pro Arg Val Thr Ala Phe Met Lys Glu Leu Glu Ile Glu  
 275 280 285  
 Cys His Lys Leu Gly Ile Pro Val Lys Thr Arg His Asn Glu Val Ala  
 290 295 300  
 Pro Asn Gln Phe Glu Leu Ala Pro Ile Phe Glu Asn Cys Asn Leu Ala  
 305 310 315 320  
 Asn Asp His Asn Gln Leu Val Met Asp Leu Met Lys Arg Ile Ala Arg  
 325 330 335  
 Lys His His Phe Ala Val Leu Phe His Glu Lys Pro Tyr Asn Gly Val  
 340 345 350

Asn Gly Ser Gly Lys His Asn Asn Trp Ser Leu Cys Thr Asp Thr Gly  
 355 360 365  
 Ile Asn Leu Phe Ala Pro Gly Lys Asn Pro Lys Gly Asn Met Leu Phe  
 370 375 380  
 Leu Thr Phe Leu Val Asn Val Leu Met Met Val His Lys Asn Gln Asp  
 385 390 395 400  
 Leu Leu Arg Ala Ser Ile Met Ser Ala Gly Asn Ser His Arg Leu Gly  
 405 410 415  
 Ala Asn Glu Ala Pro Pro Ala Ile Leu Ser Ile Phe Leu Gly Ser Gln  
 420 425 430  
 Leu Ser Ala Thr Leu Asp Glu Ile Val Arg Gln Val Thr Asn Ser Lys  
 435 440 445  
 Met Thr Pro Glu Glu Lys Thr Thr Leu Lys Leu Gly Ile Gly Arg Ile  
 450 455 460  
 Pro Glu Ile Leu Leu Asp Thr Thr Asp Arg Asn Arg Thr Ser Pro Phe  
 465 470 475 480  
 Ala Phe Thr Gly Asn Arg Phe Glu Phe Arg Ala Ala Gly Ser Ser Ala  
 485 490 495  
 Asn Cys Ala Ala Ala Met Ile Ala Ile Asn Ala Ala Met Ala Asn Gln  
 500 505 510  
 Leu Asn Glu Phe Lys Ala Ser Val Asp Lys Leu Met Glu Glu Gly Ile  
 515 520 525  
 Gly Lys Asp Glu Ala Ile Phe Arg Ile Leu Lys Glu Asn Ile Ile Ala  
 530 535 540  
 Ser Glu Pro Ile Arg Phe Glu Gly Asp Gly Tyr Ser Glu Glu Trp Lys  
 545 550 555 560  
 Gln Glu Ala Ala Arg Arg Gly Leu Thr Asn Ile Cys His Val Pro Glu  
 565 570 575  
 Ala Leu Met His Tyr Met Asp Asn Gln Ser Arg Ala Val Leu Ile Gly  
 580 585 590  
 Glu Arg Ile Phe Asn Glu Thr Glu Leu Ala Cys Arg Leu Glu Val Glu  
 595 600 605  
 Leu Glu Lys Tyr Thr Met Lys Val Gln Ile Glu Ser Arg Val Leu Gly  
 610 615 620  
 Asp Leu Ala Ile Asn His Ile Val Pro Ile Ala Val Ser Tyr Gln Asn  
 625 630 635 640  
 Arg Leu Leu Glu Asn Leu Cys Arg Met Lys Glu Ile Phe Ser Glu Glu  
 645 650 655  
 Glu Tyr Glu Val Met Ser Ala Asp Arg Lys Glu Leu Ile Lys Glu Ile  
 660 665 670  
 Ser His Arg Val Ser Ala Ile Lys Val Leu Val Arg Asp Met Thr Glu  
 675 680 685  
 Ala Arg Lys Val Ala Asn His Lys Glu Asn Phe Lys Glu Lys Ala Phe  
 690 695 700  
 Ala Tyr Glu Glu Thr Val Arg Pro Tyr Leu Glu Ser Ile Arg Asp His  
 705 710 715 720  
 Ile Asp His Leu Glu Met Glu Ile Asp Asp Glu Ile Trp Pro Leu Pro  
 725 730 735  
 Lys Tyr Arg Glu Leu Leu Phe Thr Lys  
 740 745

&lt;210&gt; 8525

&lt;211&gt; 238

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8525

Lys Lys Asn Met Ile Thr Ile His Asn Leu Arg Lys Asn Phe Gly Thr  
 1 5 10 15

Gln Thr Ala Val Asp Ile Glu Asn Tyr Thr Ile Asn Gln Gly Glu Met  
 20 25 30  
 Val Gly Leu Val Gly Asn Asn Gly Ala Gly Lys Thr Thr Leu Phe Arg  
 35 40 45  
 Leu Met Leu Asp Leu Leu Lys Ala Asp Thr Gly Glu Ile Ile Ile Asn  
 50 55 60  
 Asp Ile His Val Asn Gln Ser Glu Asp Trp Lys Ser Phe Thr Gly Ala  
 65 70 75 80  
 Phe Ile Asp Asp Gly Phe Leu Ile Ser Tyr Leu Thr Pro Glu Glu Tyr  
 85 90 95  
 Phe Tyr Phe Ile Gly Lys Met Tyr Gly Leu Lys Lys Glu Glu Val Asp  
 100 105 110  
 Glu Arg Leu Ile Pro Phe Glu Arg Phe Met Asn Gly Glu Val Leu Gly  
 115 120 125  
 Gln Lys Lys Phe Ile Arg Asn Phe Ser Ala Gly Asn Lys Gln Lys Ile  
 130 135 140  
 Gly Ile Val Ser Ala Met Leu His Tyr Pro Lys Leu Ile Ile Leu Asp  
 145 150 155 160  
 Glu Pro Phe Asn Phe Leu Asp Pro Ser Ser Gln Ser Val Ile Lys His  
 165 170 175  
 Leu Leu Lys Lys Tyr Asn Glu Glu His Asn Ala Thr Val Ile Ile Ser  
 180 185 190  
 Ser His Asn Leu Asn His Thr Val Asp Val Cys Pro Arg Ile Ala Val  
 195 200 205  
 Leu Glu His Gly Val Ile Ile Arg Asp Leu Val Asn Glu Asn Asn Ser  
 210 215 220  
 Ala Glu Lys Glu Leu Glu Asp Tyr Phe Asn Val Glu Glu Glu  
 225 230 235

<210> 8526

<211> 427

<212> PRT

<213> B.fragilis

<400> 8526

Ser Ile Asp Met Leu Thr Ile Lys Gln Ile Thr Glu Asn Thr Asp Ala  
 1 5 10 15  
 Val Ile Arg Gly Leu Glu Lys Lys His Phe Lys Gly Ala Lys Glu Thr  
 20 25 30  
 Ile Ala Gln Val Ile Glu Val Asn Asp Lys Arg Arg Asn Thr Gln Asn  
 35 40 45  
 Gln Leu Asp Lys Asn Leu Ala Glu Val Asn Ser Leu Ser Lys Thr Ile  
 50 55 60  
 Gly Gln Leu Met Lys Glu Gly Lys Lys Glu Glu Ala Glu Val Ala Lys  
 65 70 75 80  
 Ala Arg Val Ala Glu Ile Lys Glu Ser Asn Lys Thr Leu Gln Ala Asp  
 85 90 95  
 Met Asp Gln Ala Ala Asn Asp Met Leu Asn Leu Leu Tyr Thr Ile Pro  
 100 105 110  
 Asn Ile Pro Tyr Asp Ser Val Pro Glu Gly Val Gly Ala Glu Asp Asn  
 115 120 125  
 Val Val Glu Lys Met Gly Gly Met Glu Thr Gln Leu Pro Thr Asp Ala  
 130 135 140  
 Leu Pro His Trp Glu Leu Ala Lys Lys Tyr Asp Leu Ile Asp Phe Asp  
 145 150 155 160  
 Leu Gly Val Lys Ile Thr Gly Ala Gly Phe Pro Val Tyr Lys Gly Lys  
 165 170 175  
 Gly Ala Gln Leu Gln Arg Ala Leu Ile Asn Phe Phe Leu Asp Glu Ala  
 180 185 190

Arg Lys Ser Gly Tyr Thr Glu Ile Met Pro Pro Thr Val Val Asn Ala  
 195 200 205  
 Ala Ser Gly Tyr Gly Thr Gly Gln Leu Pro Asp Lys Glu Gly Gln Met  
 210 215 220  
 Tyr His Cys Glu Val Asp Asp Leu Tyr Leu Ile Pro Thr Ala Glu Val  
 225 230 235 240  
 Pro Val Thr Asn Ile Tyr Arg Asp Val Ile Leu Asp Glu Lys Gln Leu  
 245 250 255  
 Pro Ile Lys Asn Cys Ala Tyr Thr Gln Cys Phe Arg Arg Glu Ala Gly  
 260 265 270  
 Ser Tyr Gly Lys Asp Val Arg Gly Leu Asn Arg Leu His Glu Phe Ser  
 275 280 285  
 Lys Val Glu Leu Val Arg Ile Asp Lys Pro Glu His Ser Arg Gln Ser  
 290 295 300  
 His Gln Glu Met Leu Asp His Val Glu Gly Leu Leu Gln Lys Leu Glu  
 305 310 315 320  
 Leu Pro Tyr Arg Ile Leu Arg Leu Cys Gly Gly Asp Met Ser Phe Thr  
 325 330 335  
 Ala Ala Leu Cys Phe Asp Phe Glu Val Tyr Ser Glu Ala Gln Lys Arg  
 340 345 350  
 Trp Leu Glu Val Ser Ser Val Ser Asn Phe Asp Thr Tyr Gln Ala Asn  
 355 360 365  
 Arg Leu Lys Cys Arg Tyr Arg Ser Gly Glu Lys Lys Thr Glu Leu Cys  
 370 375 380  
 His Thr Leu Asn Gly Ser Ala Leu Ala Leu Pro Arg Ile Val Ala Ala  
 385 390 395 400  
 Leu Leu Glu Asn His Gln Thr Pro Glu Gly Ile Arg Ile Pro Lys Ala  
 405 410 415  
 Leu Val Pro Tyr Cys Gly Phe Asp Met Ile Asp  
 420 425

&lt;210&gt; 8527

&lt;211&gt; 232

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8527

Ile Lys Asp Met His Val Phe Tyr Thr Pro Asp Ile Gln Thr Ser Thr  
 1 5 10 15  
 Glu Leu Pro Glu Glu Ala Gln His Cys Val Arg Val Leu Arg Leu  
 20 25 30  
 Thr Ala Gly Asp Glu Ile Ser Leu Thr Asp Gly Lys Gly Asn Phe Tyr  
 35 40 45  
 Arg Ala Glu Ile Ser Val Ala Thr His Lys Arg Cys Leu Val Asn Ile  
 50 55 60  
 Lys Glu Thr Ile Tyr Gln Glu Pro Leu Trp Asp Gly His Leu His Ile  
 65 70 75 80  
 Ala Met Ala Pro Thr Lys Asn Met Asp Arg Asn Glu Trp Phe Ala Glu  
 85 90 95  
 Lys Ala Thr Glu Ile Gly Phe Asp Glu Leu Thr Phe Leu Asn Cys Arg  
 100 105 110  
 Phe Ser Glu Arg Lys Val Ile Lys Thr Glu Arg Ile Glu Lys Ile Leu  
 115 120 125  
 Val Ser Ala Ile Lys Gln Ser Leu Lys Ala Arg Leu Pro Arg Leu Asn  
 130 135 140  
 Glu Met Thr Asp Phe Cys Thr Phe Ile Glu Lys Asp Phe Lys Gly Gln  
 145 150 155 160  
 Lys Phe Ile Ala His Cys Tyr Glu Gly Glu Lys Pro Leu Leu Lys Asp  
 165 170 175

Val Leu Thr Lys Gly Glu Asp Ala Leu Val Leu Ile Gly Pro Glu Gly  
 180 185 190  
 Asp Phe Ser Glu Glu Glu Val Lys Lys Ala Ile Glu Lys Gly Phe Val  
 195 200 205  
 Pro Ile Ser Leu Gly Lys Ser Arg Leu Arg Thr Glu Thr Ala Ala Leu  
 210 215 220  
 Val Ala Cys His Thr Met Asn Met  
 225 230

<210> 8528

<211> 496

<212> PRT

<213> B.fragilis

<400> 8528

Asn Gly Thr Met Leu Phe Asn Glu Leu Arg Leu His Gly Lys Leu Ala  
 1 5 10 15  
 Ala Lys Arg His Pro Met Tyr Glu Lys Asn Lys Ile Gly Lys Tyr Ile  
 20 25 30  
 Met Tyr Ala Ser Phe Ile Phe Trp Gly Ala Tyr Phe Ile Phe Ile Gly  
 35 40 45  
 Ile Gly Leu Ala Lys Ala Ile Ser Thr Glu Val Pro Asn Met Glu Ala  
 50 55 60  
 Tyr His Ile Leu Asn Ser Gly Leu Ile Phe Ala Leu Ala Leu Asp Phe  
 65 70 75 80  
 Val Ile Arg Phe Pro Phe Gln Lys Thr Pro Thr Gln Glu Val Lys Pro  
 85 90 95  
 Tyr Leu Leu Leu Pro Val Lys Arg Ser Arg Ile Leu Asp Phe Leu Leu  
 100 105 110  
 Leu Arg His Gly Leu Ser Ser Phe Asn Leu Ile Trp Leu Phe Leu Phe  
 115 120 125  
 Val Pro Phe Ala Ala Leu Thr Val Phe Pro Phe Tyr Gly Ile Ser Gly  
 130 135 140  
 Val Leu Thr Tyr Ser Ile Gly Ile Trp Leu Leu Met Val Phe Asn Gly  
 145 150 155 160  
 Tyr Trp Tyr Leu Leu Cys Arg Thr Leu Ile Asn Glu His Ile Trp Trp  
 165 170 175  
 Val Leu Leu Pro Ile Val Val Tyr Ser Gly Ile Ala Ile Ala Ile Phe  
 180 185 190  
 Ile Pro Gln Thr Gly Phe Ile Ser Asn Phe Phe Met Asn Leu Gly Glu  
 195 200 205  
 Gly Tyr Ile Glu Gly Asn Leu Leu Ala Tyr Leu Gly Thr Leu Ala Ala  
 210 215 220  
 Thr Val Leu Val Trp Cys Ile Asn Arg Lys Val Met Thr Gly Leu Ile  
 225 230 235 240  
 Tyr Asn Glu Ile Asn Lys Val Glu Asp Thr Lys Val Lys Thr Val Ser  
 245 250 255  
 Glu Tyr Arg Phe Leu Glu Arg Phe Gly Glu Val Gly Glu Tyr Met Arg  
 260 265 270  
 Leu Glu Leu Lys Met Leu Leu Arg Asn Lys Arg Cys Lys Ala Ser Leu  
 275 280 285  
 Arg Ser Val Ala Met Leu Val Ile Ile Phe Ser Ile Ile Leu Ser Phe  
 290 295 300  
 Ser Ser Thr Tyr Asp His Met Lys Ser Phe Val Gln Val Tyr Ser Phe  
 305 310 315 320  
 Leu Gly Phe Gly Met Val Ile Leu Ile Gln Leu Met Gly Phe Glu Gly  
 325 330 335  
 Asn Tyr Ile Asp Gly Leu Met Thr Arg Lys Glu Ser Ile Lys Ser Leu  
 340 345 350

4670 8528 496 PRT B.fragilis



Leu Thr Ala Lys Tyr Tyr Ile Tyr Ser Leu Ala Glu Ile Ile Pro Leu  
 355 360 365  
 Ile Leu Leu Ile Pro Ala Phe Val Met Gly Lys Ala Ser Leu Leu Gly  
 370 375 380  
 Ala Val Ala Leu Ile Phe Leu Thr Thr Gly Pro Val Tyr Cys Ile Leu  
 385 390 395 400  
 Phe Gln Leu Ala Val Tyr Asn His Lys Thr Val Pro Leu Asn Glu Ser  
 405 410 415  
 Ile Thr Gly Lys Gln Ser Met Asn Thr Gly Met Gln Met Leu Ile Ser  
 420 425 430  
 Phe Gly Leu Phe Ile Val Pro Thr Thr Leu Tyr Gly Thr Leu Pro Met  
 435 440 445  
 Leu Leu Gly Gln Thr Trp Ala Tyr Ile Val Ile Leu Ile Ile Gly Leu  
 450 455 460  
 Gly Phe Thr Leu Thr Ser Pro Met Trp Ile Asn Asn Val Tyr Val Arg  
 465 470 475 480  
 Phe Met Gln Arg Arg Tyr Glu Asn Met Glu Gly Phe Arg Asp Ser Lys  
 485 490 495

<210> 8529

<211> 264

<212> PRT

<213> B.fragilis

<400> 8529

Ile Ile Asn Met His Thr Arg Glu Glu Gln Met Glu Ala Phe Gly Arg  
 1 5 10 15  
 Phe Leu Asp Ile Leu Asp Glu Leu Arg Val Lys Cys Pro Trp Asp Arg  
 20 25 30  
 Lys Gln Thr Asn Glu Ser Leu Arg Pro Asn Thr Ile Glu Glu Thr Tyr  
 35 40 45  
 Glu Leu Cys Asp Ala Leu Met Arg Asn Asp Lys Lys Asp Ile Cys Lys  
 50 55 60  
 Glu Leu Gly Asp Val Leu Leu His Val Ala Phe Tyr Ala Lys Ile Gly  
 65 70 75 80  
 Ser Glu Thr Gly Asp Phe Asp Met Lys Asp Val Cys Asp Lys Leu Cys  
 85 90 95  
 Glu Lys Leu Ile Phe Arg His Pro His Val Phe Gly Glu Val Lys Ala  
 100 105 110  
 Glu Thr Ala Gly Gln Val Ser Glu Asn Trp Glu Gln Leu Lys Leu Lys  
 115 120 125  
 Glu Lys Asp Gly Asn Lys Ser Val Leu Ser Gly Val Pro Ala Ala Leu  
 130 135 140  
 Pro Ser Leu Ile Lys Ala Tyr Arg Ile Gln Asp Lys Ala Arg Asn Val  
 145 150 155 160  
 Gly Phe Asp Trp Glu Arg Glu Gln Val Trp Asp Lys Val Lys Glu  
 165 170 175  
 Glu Ile Ala Glu Phe Gln Val Glu Val Ala Asn Met Asp Lys Asp Lys  
 180 185 190  
 Ala Glu Ala Glu Phe Gly Asp Val Met Phe Ser Leu Ile Asn Ala Ala  
 195 200 205  
 Arg Leu Tyr Lys Ile Asn Pro Asp Asn Ala Leu Glu Arg Thr Asn Gln  
 210 215 220  
 Lys Phe Ile Arg Arg Phe Asn Tyr Leu Glu Asp His Thr Ile Lys Glu  
 225 230 235 240  
 Gly Lys Asn Leu Lys Asp Met Ser Leu Asp Glu Met Asp Ala Ile Trp  
 245 250 255  
 Asn Glu Ala Lys Lys Gly Leu  
 260

<210> 8530  
 <211> 216  
 <212> PRT  
 <213> B.fragilis

<400> 8530

Val	Tyr	Thr	Met	Lys	Gln	Ile	Ile	Ile	Ser	Ile	Trp	Ile	Ala	Leu	Leu
1				5					10					15	
Thr	Leu	Pro	Val	Phe	Ala	Gln	Gln	Gln	Met	Gln	Ala	Lys	Val	Val	Leu
			20					25					30		
Asp	Lys	Thr	Ala	Ala	Thr	Phe	Glu	Lys	Ala	Gly	Gly	Ile	Cys	Ala	Glu
		35					40					45			
Phe	Asn	Val	Thr	Val	Phe	Asn	Lys	Ser	Arg	Met	Ala	Gly	Gln	Ser	Ala
	50				55						60				
Gly	Val	Ile	Glu	Leu	Lys	Gly	Glu	Lys	Phe	Val	Leu	Lys	Thr	Asp	Asp
65					70				75					80	
Gly	Ile	Thr	Trp	Phe	Asp	Gly	Lys	Thr	Gln	Trp	Ser	Tyr	Leu	Arg	Ser
				85					90					95	
Ser	Asp	Glu	Val	Asn	Ile	Ser	Asn	Pro	Thr	Gly	Thr	Glu	Leu	Gln	Gly
			100					105					110		
Leu	Asn	Pro	Tyr	Ala	Leu	Leu	Gln	Ile	Tyr	Arg	His	Gly	Phe	Asp	Tyr
		115					120					125			
Lys	Ile	Gly	Ser	Leu	Lys	Asn	Phe	Gly	Gly	Lys	Pro	Val	Tyr	Glu	Val
	130					135					140				
Val	Leu	Thr	Ala	Thr	Asp	Lys	Lys	Arg	Asp	Leu	Ser	Arg	Ile	Val	Leu
145					150					155					160
Tyr	Val	Ser	Lys	Asp	Thr	Tyr	Gln	Pro	Leu	Phe	Ile	Met	Met	Glu	Gln
				165					170					175	
Arg	Asp	Lys	Ser	Arg	Ser	Glu	Ile	Thr	Val	Thr	Gly	Tyr	Gln	Thr	Gly
			180				185						190		
Leu	Lys	Tyr	Ala	Asp	Gly	Met	Phe	Val	Phe	Asp	Lys	Lys	Gln	Tyr	Pro
		195				200						205			
His	Ala	Glu	Val	Ile	Asp	Leu	Arg								
		210				215									

<210> 8531  
 <211> 884  
 <212> PRT  
 <213> B.fragilis

<400> 8531

Thr	Asn	Lys	Ile	Asp	Arg	Tyr	Asn	Met	Glu	Leu	Ala	Ser	Lys	Tyr	Asn
1				5					10					15	
Pro	Ala	Asp	Val	Glu	Gly	Lys	Trp	Tyr	Gln	Tyr	Trp	Leu	Asp	His	Lys
			20					25					30		
Leu	Phe	Ser	Ser	Lys	Pro	Asp	Gly	Arg	Glu	Pro	Tyr	Thr	Ile	Val	Ile
		35					40					45			
Pro	Pro	Pro	Asn	Val	Thr	Gly	Val	Leu	His	Met	Gly	His	Met	Leu	Asn
		50				55					60				
Asn	Thr	Ile	Gln	Asp	Ile	Leu	Val	Arg	Arg	Ala	Arg	Met	Glu	Gly	Lys
65					70				75					80	
Asn	Ala	Cys	Trp	Val	Pro	Gly	Thr	Asp	His	Ala	Ser	Ile	Ala	Thr	Glu
			85					90					95		
Ala	Lys	Val	Val	Asn	Lys	Leu	Ala	Ala	Gln	Gly	Ile	Lys	Lys	Thr	Asp
			100				105						110		
Leu	Ser	Arg	Asp	Glu	Phe	Leu	Lys	His	Ala	Trp	Ala	Trp	Thr	Asp	Glu
		115					120					125			
His	Gly	Gly	Ile	Ile	Leu	Lys	Gln	Leu	Arg	Lys	Leu	Gly	Ala	Ser	Cys

130	135	140
Asp Trp Asp Arg Thr Ala Phe Thr Met Asp Glu Lys Arg Ser Glu Ser		
145	150	155
Val Leu Lys Val Phe Val Asp Leu Tyr Asn Lys Gly Leu Ile Tyr Arg		160
	165	170
Gly Val Arg Met Val Asn Trp Asp Pro Lys Ala Leu Thr Ala Leu Ser		175
	180	185
Asp Glu Glu Val Ile Tyr Lys Glu His Gly Lys Leu Phe Tyr Leu		190
	195	200
Arg Tyr Lys Ile Glu Gly Glu Asp Gly Tyr Ala Val Val Ala Thr Thr		205
	210	215
Arg Pro Glu Thr Ile Met Gly Asp Thr Ala Met Cys Ile Asn Pro Asn		220
225	230	235
Asp Pro Lys Asn Gln His Leu Lys Gly Lys Lys Val Ile Val Pro Leu		240
	245	250
Val Gly Arg Val Ile Pro Val Ile Glu Asp Asp Tyr Val Asp Ile Glu		255
	260	265
Phe Gly Thr Gly Cys Leu Lys Val Thr Pro Ala His Asp Val Asn Asp		270
	275	280
Tyr Met Leu Gly Glu Lys Tyr Asn Leu Pro Ser Ile Asp Ile Phe Asn		285
	290	295
Asp Asn Gly Thr Ile Ser Glu Ala Ala Gly Met Tyr Ile Gly Met Asp		300
305	310	315
Arg Phe Asp Val Arg Lys Gln Ile Glu Lys Asp Leu Glu Ala Ala Gly		320
	325	330
Leu Leu Glu Lys Thr Glu Ala Tyr Thr Asn Lys Val Gly Tyr Ser Glu		335
	340	345
Arg Thr Asn Val Val Ile Glu Pro Lys Leu Ser Met Gln Trp Phe Leu		350
	355	360
Lys Met Glu His Leu Ala Gln Ile Ala Leu Glu Pro Val Met Lys Asp		365
	370	375
Asp Ile Lys Phe Tyr Pro Ala Lys Tyr Lys Asn Thr Tyr Arg His Trp		380
385	390	395
Met Glu Asn Ile Lys Asp Trp Cys Ile Ser Arg Gln Leu Trp Trp Gly		400
	405	410
His Arg Ile Pro Ala Tyr Phe Leu Pro Glu Gly Gly Tyr Val Val Ala		415
	420	425
Val Thr Asp Glu Glu Ala Leu Lys Leu Ala Arg Glu Lys Thr Gly Asn		430
	435	440
Pro Asn Leu Lys Met Thr Asp Leu Arg Gln Asp Glu Asp Cys Leu Asp		445
	450	455
Thr Trp Phe Ser Ser Trp Leu Trp Pro Ile Ser Leu Phe Asp Gly Ile		460
465	470	475
Asn Asn Pro Gly Asn Glu Glu Ile Asn Tyr Tyr Tyr Pro Thr Ser Asp		480
	485	490
Leu Val Thr Gly Pro Asp Ile Ile Phe Phe Trp Val Ala Arg Met Ile		495
	500	505
Met Ala Gly Tyr Glu Tyr Glu Gly Lys Met Pro Phe Lys Asn Val Tyr		510
	515	520
Phe Thr Gly Ile Val Arg Asp Lys Leu Gly Arg Lys Met Ser Lys Ser		525
	530	535
Leu Gly Asn Ser Pro Asp Pro Leu Glu Leu Ile Glu Lys Tyr Gly Ala		540
545	550	555
Asp Gly Val Arg Met Gly Met Met Leu Ser Ala Pro Ala Gly Asn Asp		560
	565	570
Ile Leu Phe Asp Asp Ala Leu Cys Glu Gln Gly Arg Asn Phe Cys Asn		575
	580	585
Lys Ile Trp Asn Ala Phe Arg Leu Val Lys Gly Trp Glu Asn Gly Met		590
	595	600
		605

130 135 140  
 145 150 155  
 160 165 170  
 175 180 185  
 190 195 200  
 205 210 215  
 220 225 230  
 235 240 245  
 250 255 260  
 265 270 275  
 280 285 290  
 295 300 305  
 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395  
 400 405 410  
 415 420 425  
 430 435 440  
 445 450 455  
 460 465 470  
 475 480 485  
 490 495 500  
 505 510 515  
 520 525 530  
 535 540 545  
 550 555 560  
 565 570 575  
 580 585 590  
 595 600 605

Gly Thr Ile Asp Ile Pro Ala Asp Ala His Leu Ala Val Gln Trp Phe  
 610 615 620  
 Asp Gln Arg Leu Asp Ala Ala Ala Val Glu Val Ala Asp Leu Phe Ser  
 625 630 635 640  
 Lys Tyr Arg Leu Ser Glu Ala Leu Met Leu Ile Tyr Lys Leu Phe Trp  
 645 650 655  
 Asp Glu Phe Ser Ser Trp Leu Leu Glu Ile Val Lys Pro Ala Tyr Gly  
 660 665 670  
 Gln Pro Val Asn Gly Phe Ile Tyr Ser Met Thr Leu Ser Ala Phe Glu  
 675 680 685  
 Arg Leu Leu Ala Met Leu His Pro Phe Met Pro Phe Ile Thr Glu Glu  
 690 695 700  
 Leu Trp Gln Gln Leu Arg Glu Arg Glu Pro Gly Ala Ser Leu Met Val  
 705 710 715 720  
 Gln Pro Leu Gly Glu Pro Gly Glu Val Asn Glu Glu Phe Leu Gln Gln  
 725 730 735  
 Phe Glu Thr Ala Lys Glu Ile Ile Ser Ser Val Arg Thr Ile Arg Leu  
 740 745 750  
 Gln Lys Asn Ile Ala Leu Lys Glu Pro Leu Glu Leu Gln Val Val Gly  
 755 760 765  
 Ala Asn Pro Val Glu Lys Met Asn Pro Val Ile Arg Lys Met Cys Asn  
 770 775 780  
 Leu Ser Ala Ile Glu Val Val Asp Ala Lys Ala Asp Gly Ala Ser Ser  
 785 790 795 800  
 Phe Met Ile Gly Thr Thr Glu Phe Ala Val Pro Leu Gly Asn Met Ile  
 805 810 815  
 Asp Val Asp Ala Glu Ile Ala Arg Met Glu Ala Glu Leu Lys His Lys  
 820 825 830  
 Glu Gly Phe Leu Gln Gly Val Leu Lys Lys Leu Ser Asn Glu Lys Phe  
 835 840 845  
 Val Asn Asn Ala Pro Ala Ala Val Ile Glu Met Glu Arg Lys Lys Gln  
 850 855 860  
 Ala Asp Ala Glu Ser Ile Ile Gln Ser Leu Lys Glu Ser Ile Ala Ser  
 865 870 875 880  
 Leu Lys Asn Val

<210> 8532

<211> 317

<212> PRT

<213> B.fragilis

<400> 8532

Lys Tyr Glu Ile Ile Asn Ile Ile Ser Met Ser Val Glu Pro Gly Lys  
 1 5 10 15  
 Trp Gly Val Ile Tyr Asn Pro Lys Ala Gly Thr Arg Lys Val Gln Lys  
 20 25 30  
 Arg Trp Lys Glu Ile Lys Glu Tyr Met Asp Ser Lys Gly Val Ser Tyr  
 35 40 45  
 Asp Tyr Val Gln Ser Glu Gly Phe Gly Ser Val Glu Arg Leu Ala Gly  
 50 55 60  
 Ile Leu Ala Asn Asn Gly Tyr Arg Thr Ile Val Val Gly Gly Asp  
 65 70 75 80  
 Gly Ala Leu Asn Asp Ala Ile Asn Gly Ile Met Ser Ser Asn Ala Glu  
 85 90 95  
 Lys Lys Glu Glu Ile Ala Ile Gly Ile Ile Pro Asn Gly Ile Gly Asn  
 100 105 110  
 Asp Phe Ala Arg Tyr Trp Glu Leu Asn Leu Glu Tyr Lys Gln Ala Val  
 115 120 125

Asp Trp Ile Ile Asn Asn Arg Gln Lys Lys Ile Asp Val Gly Tyr Cys  
 130 135 140  
 Asn Phe Tyr Asp Gly Glu Lys His Gln Arg Arg Tyr Phe Leu Asn Ala  
 145 150 155 160  
 Val Asn Ile Gly Leu Gly Ala Arg Ile Val Lys Ile Thr Asp Gln Thr  
 165 170 175  
 Lys Arg Phe Trp Gly Val Lys Phe Leu Ser Tyr Leu Ala Ala Leu Phe  
 180 185 190  
 Leu Leu Ile Phe Glu Arg Lys Leu Tyr Arg Ser His Leu Lys Ile Asn  
 195 200 205  
 Asp Glu His Ile Arg Gly Arg Ile Met Thr Val Cys Val Gly Ser Ala  
 210 215 220  
 Thr Gly Tyr Gly Gln Thr Pro Ser Ala Val Pro Tyr Asn Gly Trp Leu  
 225 230 235 240  
 Asp Val Ser Val Ile Tyr Arg Pro Glu Phe Leu Gln Ile Leu Ser Gly  
 245 250 255  
 Leu Trp Met Leu Ile Gln Gly Arg Ile Leu Asn His Lys Val Val Lys  
 260 265 270  
 Ser Tyr Arg Thr Arg Lys Val Lys Val Leu Arg Ala Gln Asn Ala Ala  
 275 280 285  
 Val Asp Leu Asp Gly Arg Leu Leu Pro Arg His Phe Pro Ile Glu Ile  
 290 295 300  
 Gly Ile Ile Pro Glu Ala Thr Thr Leu Ile Ile Pro Asn  
 305 310 315

<210> 8533  
 <211> 526  
 <212> PRT  
 <213> B.fragilis

<400> 8533  
 Phe Thr Glu Ile Lys Lys Ile Val Ile Met Val Lys Arg Met Ile Ser  
 1 5 10 15  
 Gln Leu Ser Val Leu Ala Val Leu Ile Val Phe Met Ala Ala Cys Ser  
 20 25 30  
 Lys Lys Ala Glu Tyr Ile His Val Ile Pro Ala Asp Ala Ser Ala Val  
 35 40 45  
 Ala Ser Ile Asn Leu Asn Ser Leu Ala Asp Lys Ala Gly Leu Asn Asp  
 50 55 60  
 Lys Gln Asn Glu Gly Met Lys Gln Lys Met Met Glu Ala Leu Lys Ser  
 65 70 75 80  
 Gly Met Asn Ala Ala Ala Phe Gln Gln Leu Glu Lys Ile Met Lys Asn  
 85 90 95  
 Pro Ser Gln Ser Gly Ile Asp Val Lys Ala Pro Val Phe Val Phe Thr  
 100 105 110  
 Ser Lys Thr Phe Ile Ser Pro Thr Ile Val Ala Lys Val Ser Asn Ile  
 115 120 125  
 Glu Asp Leu Arg Ala Ser Leu Asp Leu Met Ala Lys Glu Gly Ile Cys  
 130 135 140  
 Gln Pro Met Ala Glu Glu Gly Tyr Ser Phe Thr Ser Leu Gln Lys  
 145 150 155 160  
 Asn Asn Leu Leu Val Phe Asn Glu Asn Ala Ala Val Leu Thr Glu Ala  
 165 170 175  
 Tyr Gly Thr Ser Gln Met Asp Val Ala Lys Gln Thr Ile Ser Thr Leu  
 180 185 190  
 Leu Lys Gln Thr Glu Glu Asn Ser Ile Ala Ser Asn Gly Ser Phe Arg  
 195 200 205  
 Lys Met Gln Asp Gln Lys Gly Asp Ile Asn Phe Phe Ala Ser Met Asp  
 210 215 220

Ala Val Pro Lys Met Tyr Thr Gln Gln Ile Ser Leu Gly Leu Ser Ser  
 225 230 235 240  
 Gln Ile Asp Leu Ser Glu Val Lys Ala Val Gly Asn Leu Asn Phe Glu  
 245 250 255  
 Lys Gly Lys Ile Ala Leu Gln Ile Glu Thr Tyr Ser Asp Asn Ala Glu  
 260 265 270  
 Thr Asp Ala Leu Leu Lys Lys Gln Ala Gln Ala Val Lys Lys Leu Asn  
 275 280 285  
 Thr Thr Phe Leu Gln Asn Phe Pro Glu Ser Thr Leu Ala Phe Leu Asn  
 290 295 300  
 Ile Gly Val Asn Gly Ala Ala Phe Tyr Asp Leu Leu Phe Asn Asn Glu  
 305 310 315 320  
 Glu Phe Arg Arg Asn Val Ser Leu Ala Lys Ala Asp Glu Val Lys Ser  
 325 330 335  
 Leu Phe Ala Ser Phe Asp Gly Asp Ile Ser Ile Gly Leu Ile Asn Val  
 340 345 350  
 Thr Leu Asn Ser Val Pro Thr Phe Ala Ala Tyr Ala Asp Ala Lys Asp  
 355 360 365  
 Gly Asn Ala Leu Lys Ala Leu Tyr Asp Asn Lys Lys Gln Leu Lys Leu  
 370 375 380  
 Gly Lys Asn Glu Asp Ile Ile Gln Leu Gly Glu Asn Glu Tyr Val Tyr  
 385 390 395 400  
 Lys Ser Arg Ala Thr Asn Val Phe Phe Gly Ile Arg Asn Lys Gln Met  
 405 410 415  
 Tyr Ala Thr Asn Asp Glu Leu Leu Tyr Lys Ser Ile Ser Lys Pro Val  
 420 425 430  
 Glu Lys Ser Ile Lys Asp Ala Gly Tyr Val Ser Asp Met Lys Gly Lys  
 435 440 445  
 Asn Val Phe Phe Val Ile Asn Met Asp Ala Ile Leu Asp Leu Pro Val  
 450 455 460  
 Val Lys Met Met Ala Gly Phe Gly Gly Glu Glu Tyr Gln Thr Tyr Tyr  
 465 470 475 480  
 Lys Leu Ala Ser Lys Ile Ser Tyr Ile Glu Ala Phe Ser Asp Ser Glu  
 485 490 495  
 Gly Lys Thr Glu Thr Ala Ile Leu Leu Lys Asn Lys Asp Asp Asn Ala  
 500 505 510  
 Leu Lys Gln Ile Val Asp Phe Ala Lys Gln Phe Ala Gly Met  
 515 520 525

<210> 8534  
 <211> 191  
 <212> PRT  
 <213> B.fragilis

<400> 8534  
 His Ile Arg Ile Thr Asn Glu Pro Met Asn Pro Tyr Asn Glu Arg Glu  
 1 5 10 15  
 Val Leu Ala Leu Leu Gln Asp Glu Arg Thr Gln Lys Gln Gly Phe Glu  
 20 25 30  
 Arg Ile Val Ser Gln Tyr Ser Glu Gln Leu Tyr Trp Gln Ile Arg Arg  
 35 40 45  
 Met Val Leu Ser His Asp Asp Ala Asn Asp Leu Leu Gln Asn Thr Phe  
 50 55 60  
 Ile Lys Ala Trp Ile Asn Ile Asp Tyr Phe Arg Ala Glu Ala Lys Leu  
 65 70 75 80  
 Ser Thr Trp Leu Tyr Arg Ile Ala Leu Asn Glu Cys Ile Thr Phe Leu  
 85 90 95  
 Asn Lys Gln Arg Ala Met Asn Thr Val Ala Ile Asp Asp Pro Glu Ala  
 100 105 110

Asp	Val	Thr	Gln	Lys	Leu	Glu	Ser	Asp	Pro	Tyr	Phe	Ser	Gly	Asp	Arg
	115						120					125			
Ala	Glu	Leu	Leu	Leu	Gln	Lys	Ala	Leu	Leu	Thr	Leu	Pro	Glu	Lys	Gln
	130					135					140				
Arg	Met	Val	Phe	Asn	Leu	Lys	Tyr	Tyr	Gln	Glu	Met	Lys	Tyr	Glu	Glu
145				150						155					160
Met	Ser	Glu	Ile	Phe	Gly	Thr	Ser	Val	Gly	Ala	Leu	Lys	Ala	Ser	Tyr
			165						170					175	
His	His	Ala	Val	Lys	Lys	Ile	Glu	Lys	Phe	Leu	Glu	Glu	Ala	Asn	
		180					185						190		

<210> 8535  
 <211> 218  
 <212> PRT  
 <213> B.fragilis

<400> 8535

Lys	Asn	Met	Ile	Leu	Lys	Arg	Thr	Ile	Ser	Lys	Glu	Glu	Val	Lys	Glu
1			5					10					15		
Met	Pro	Lys	Ala	Ala	Phe	Pro	Gly	Arg	Ile	His	Val	Ile	Gln	Thr	Glu
		20					25					30			
Ser	Glu	Ala	Gln	Lys	Ala	Val	Ala	Tyr	Leu	Gln	Ser	Gln	Ala	Ile	Leu
	35					40					45				
Gly	Ile	Asp	Ser	Glu	Thr	Arg	Pro	Ser	Phe	Thr	Lys	Gly	His	Ser	His
50					55					60					
Lys	Val	Ala	Leu	Leu	Gln	Ile	Ser	Ser	Asp	Glu	Cys	Cys	Phe	Leu	Phe
65				70					75					80	
Arg	Leu	Asn	Met	Thr	Gly	Leu	Thr	Gln	Pro	Ile	Ile	Glu	Leu	Leu	Glu
			85					90					95		
Asp	Pro	Lys	Val	Ile	Lys	Val	Gly	Leu	Ser	Leu	Lys	Asp	Asp	Phe	Met
		100					105					110			
Met	Leu	His	Lys	Arg	Ala	Pro	Phe	Asn	Gln	Gln	Ala	Cys	Ile	Glu	Leu
	115					120					125				
Gln	Glu	Tyr	Val	Arg	Pro	Phe	Gly	Ile	Gln	Asp	Lys	Ser	Leu	Gln	Lys
130					135					140					
Ile	Tyr	Gly	Ile	Leu	Phe	Ser	Glu	Lys	Ile	Ser	Lys	Ser	Gln	Arg	Leu
145				150					155						160
Ser	Asn	Trp	Glu	Ala	Asp	Val	Leu	Thr	Asp	Ala	Gln	Lys	Gln	Tyr	Ala
		165						170						175	
Ala	Thr	Asp	Ala	Trp	Ala	Cys	Leu	Asn	Ile	Tyr	His	Leu	Leu	Glu	Glu
		180					185					190			
Leu	Lys	Arg	Thr	Gly	Asn	Tyr	Glu	Leu	Ala	Pro	Glu	Glu	Glu	Ala	Thr
	195					200					205				
Glu	Lys	Val	Lys	Val	Gly	Ser	Asp	Gln	Gln						
210					215										

<210> 8536  
 <211> 287  
 <212> PRT  
 <213> B.fragilis

<400> 8536

Cys	Ile	Arg	Met	Glu	Leu	Leu	Leu	Gly	Ile	Val	Ile	Val	Val	Thr	Cys
1			5					10					15		
Trp	Met	Val	Val	Arg	Ile	Ile	Arg	Ser	Ser	Lys	Asn	Gln	Glu	Gly	Tyr
		20					25					30			
Lys	Arg	Trp	Arg	Ala	Gly	Asn	Tyr	Ala	Ser	Glu	Asn	Pro	Tyr	Ala	Lys
	35				40					45					
Glu	Lys	Ala	Ser	Gly	Pro	Leu	Ser	Gln	Gly	Leu	Phe	Ser	Lys	Arg	Val

50		55		60
Arg Thr Thr Gly Ala	Arg Arg Phe Asp Asp Gly Ala Ile Arg Trp Cys			
65	70	75	80	
Ala Asn Leu Leu Ala	Thr Glu Glu Ser Arg Leu Arg Glu Val Leu Asp			
85	90	95		
Tyr Ile Pro Arg Gln	Tyr Thr Cys Phe His Val Arg Lys Arg Ser Gly			
100	105	110		
Gly Phe Arg Tyr Ile	Ser Ala Pro Ala Gly Asp Phe Arg Ser Met Gln			
115	120	125		
Gln Thr Ile Tyr His	Arg Ile Leu Leu Leu Ala Asn Ile His Pro Ala			
130	135	140		
Val Thr Gly Phe Cys	Pro Gly Lys Ser Val Ser Asp Asn Ala Arg Val			
145	150	155	160	
His Leu Gly Arg Lys	Asn Val Leu Lys Val Asp Leu His Asp Phe Phe			
165	170	175		
Pro Ser Ile Arg Ser	Pro Arg Val Arg Ala Ala Phe Arg Glu Met Gly			
180	185	190		
Tyr Ser Arg Pro Ile	Ala Lys Val Leu Ala Glu Leu Cys Cys Leu Arg			
195	200	205		
Cys Phe Leu Pro Gln	Gly Ala Pro Thr Ser Pro Ala Leu Ser Asn Ile			
210	215	220		
Ile Ala Tyr Pro Met	Asp Lys Lys Met Met Ala Leu Ala Gly Glu Tyr			
225	230	235	240	
Gly Leu Val Tyr Thr	Arg Tyr Ala Asp Asp Leu Thr Phe Ser Gly Asp			
245	250	255		
Tyr Leu Pro Lys Asp	Glu Val Leu Val Arg Ile His Arg Ile Ile Arg			
260	265	270		
Glu Glu Gly Phe His	Asp Glu Arg Gln Lys Asp Pro Leu Leu Val			
275	280	285		

&lt;210&gt; 8537

&lt;211&gt; 838

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8537

Ser Tyr Ser Leu Arg	Phe Ile Ile His Met Ala Lys Lys Lys Ser Asp
1	5 10 15
Lys Glu Ala Glu Gln	Lys Pro Ala Ser Thr Lys Lys Tyr Val Ala Phe
20	25 30
Phe Arg Asn Glu Thr	Ile His Phe Val Ile Gly Leu Val Leu Val Ile
35	40 45
Phe Ser Val Tyr Leu	Leu Leu Ala Phe Thr Ser Phe Phe Phe Thr Gly
50	55 60
Ala Ala Asp Gln Ser	Ile Ile Asp Ser Gly Asn Ala Gln Asp Leu Ala
65	70 75 80
Ala Val Asn Asn His	Val Lys Asn Tyr Ala Gly Ser Arg Gly Ala Gln
85	90 95
Leu Ala Ser Tyr Leu	Ile Asn Asp Cys Phe Gly Ile Ser Ser Phe Phe
100	105 110
Ile Leu Ile Tyr Leu	Ala Val Ala Gly Leu Lys Leu Met Arg Val Arg
115	120 125
Val Val Arg Leu Trp	Lys Trp Phe Ile Gly Cys Ser Leu Leu Leu Ile
130	135 140
Trp Phe Ser Val Phe	Leu Gly Phe Val Phe Met Asp His Tyr Gln Asp
145	150 155 160
Ser Phe Ile Tyr Leu	Gly Gly Leu His Gly Tyr Asn Ile Ser Asn Trp
165	170 175
Leu Ile Ser Gln Val	Gly Ile Pro Gly Val Trp Leu Ile Leu Leu Ala



	180		185		190
Thr Gly Ile Cys Phe Leu Ile Tyr Met Ser Ala Arg Thr Ile Ile Trp					
195		200		205	
Leu Arg Lys Leu Phe Ser Leu Ser Phe Leu Lys Arg Lys Gln Lys Glu					
210		215		220	
Glu Leu Ala Glu Val Thr Gln Ala Pro Gln Ser His Glu Tyr Asp Asn					
225		230		235	240
Pro Lys Pro Gln Glu Val Glu Phe Asp Val Asn Arg Thr Phe Arg Gln					
	245		250		255
Glu Val Pro Val Lys Lys Val Glu Thr Thr Val Val Ser Glu Thr Pro					
	260		265		270
Val Glu Ser Ser Thr Glu Met Pro Val Thr Pro Glu Asp Arg Asp Val					
	275		280		285
Thr Ser Asp Gly Asp Val Thr Met Thr Phe Glu Gln Thr Ala Pro Asp					
	290		295		300
Pro Val Pro Pro Phe Arg Ala Ala Ser Ala Asp Lys Glu Pro Glu Phe					
305		310		315	320
Glu Ile Glu Pro Ala Ala Asp Asp Glu Asn Tyr Gln Gly Ala Glu Thr					
	325		330		335
Glu Pro Tyr Asn Pro Lys Leu Asp Leu Glu Asn Tyr His Phe Pro Thr					
	340		345		350
Ile Asp Leu Met Lys His Tyr Glu Asn Ser Glu Pro Thr Ile Asn Met					
	355		360		365
Glu Glu Gln Asn Ala Asn Lys Asp Arg Ile Ile Asn Thr Leu Arg Ser					
	370		375		380
Phe Gly Ile Glu Ile Ser Thr Ile Lys Ala Thr Val Gly Pro Thr Val					
385		390		395	400
Thr Leu Tyr Glu Ile Thr Pro Glu Gln Gly Val Arg Ile Ser Lys Ile					
	405		410		415
Arg Gly Leu Glu Asp Asp Ile Ala Leu Ser Leu Ser Ala Leu Gly Ile					
	420		425		430
Arg Ile Ile Ala Pro Ile Pro Gly Lys Gly Thr Ile Gly Ile Glu Val					
	435		440		445
Pro Asn Ser Asn Pro Lys Ile Val Ser Gly Gln Ser Ile Ile Gly Ser					
	450		455		460
Lys Lys Phe Gln Glu Ser Thr Tyr Asp Leu Pro Ile Ala Leu Gly Lys					
465		470		475	480
Thr Ile Thr Asn Glu Val Phe Met Val Asp Leu Cys Lys Met Pro His					
	485		490		495
Val Leu Val Ala Gly Ala Thr Gly Gln Gly Lys Ser Val Gly Leu Asn					
	500		505		510
Ala Ile Ile Thr Ser Leu Leu Tyr Lys Lys His Pro Ala Glu Leu Lys					
	515		520		525
Phe Val Leu Val Asp Pro Lys Lys Val Glu Phe Ser Ile Tyr Ser Val					
	530		535		540
Ile Glu His His Phe Leu Ala Lys Leu Pro Asp Gly Glu Asp Ala Ile					
545		550		555	560
Ile Thr Asp Val Thr Lys Val Val Gln Thr Leu Asn Ser Val Cys Val					
	565		570		575
Glu Met Asp Ser Arg Tyr Asp Leu Leu Lys Met Ala His Val Arg Asn					
	580		585		590
Ile Lys Glu Tyr Asn Glu Lys Phe Ile Asn Arg Arg Leu Asn Pro Glu					
	595		600		605
Lys Gly His Lys Phe Met Pro Tyr Ile Val Val Val Ile Asp Glu Phe					
	610		615		620
Gly Asp Leu Ile Met Thr Ala Gly Lys Glu Ile Glu Leu Pro Ile Ala					
625		630		635	640
Arg Ile Ala Gln Leu Ala Arg Ala Val Gly Ile His Met Ile Ile Ala					
	645		650		655

180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395 400  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475 480  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555 560  
 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620  
 625 630 635 640  
 645 650 655

Thr Gln Arg Pro Thr Thr Asn Ile Ile Thr Gly Thr Ile Lys Ala Asn  
 660 665 670  
 Phe Pro Ala Arg Ile Ala Phe Arg Val Ser Ala Met Met Asp Ser Arg  
 675 680 685  
 Thr Ile Leu Asp Arg Pro Gly Ala Asn Gln Leu Ile Gly Arg Gly Asp  
 690 695 700  
 Met Leu Phe Leu Gln Gly Ala Asp Pro Val Arg Val Gln Cys Ala Phe  
 705 710 715 720  
 Ile Asp Thr Pro Glu Val Glu Glu Ile Thr Lys Tyr Ile Ser Arg Gln  
 725 730 735  
 Gln Gly Tyr Pro Thr Ala Phe Phe Leu Pro Glu Tyr Val Ser Glu Asp  
 740 745 750  
 Ser Gly Ser Asp Leu Gly Glu Val Asp Met Gly Arg Leu Asp Pro Leu  
 755 760 765  
 Phe Glu Glu Ala Ala Arg Leu Ile Val Ile His Gln Gln Gly Ser Thr  
 770 775 780  
 Ser Leu Ile Gln Arg Lys Phe Ser Ile Gly Tyr Asn Arg Ala Gly Arg  
 785 790 795 800  
 Leu Met Asp Gln Leu Glu Lys Ala Gly Ile Val Gly Pro Ser Gln Gly  
 805 810 815  
 Ser Lys Ala Arg Asp Val Leu Cys Val Asp Glu Asn Asp Leu Glu Met  
 820 825 830  
 Arg Leu Asn Asn Ile Gln  
 835

<210> 8538  
 <211> 134  
 <212> PRT  
 <213> B.fragilis

<400> 8538  
 Leu Ile Ile Leu Asn Thr Lys Asn Leu Lys Leu Lys Lys Asp Glu Pro  
 1 5 10 15  
 Leu Met Met Ile Glu Val Leu Lys Ser Lys Ile His Cys Ala Arg Val  
 20 25 30  
 Thr Glu Ala Asn Leu Asn Tyr Met Gly Ser Ile Thr Ile Asp Glu Asn  
 35 40 45  
 Leu Leu Asp Ala Ala Asn Met Ile Ala Gly Glu Lys Val Tyr Ile Ala  
 50 55 60  
 Asp Asn Asn Asn Gly Glu Arg Phe Glu Thr Tyr Ile Ile Lys Gly Glu  
 65 70 75 80  
 Arg Gly Ser Gly Lys Ile Cys Leu Asn Gly Ala Ala Ala Arg Lys Val  
 85 90 95  
 Gln Pro Asp Asp Ile Val Ile Ile Met Ser Tyr Ala Leu Met Asp Phe  
 100 105 110  
 Glu Glu Ala Lys Ser Phe Lys Pro Thr Val Ile Phe Pro Asp Pro Ala  
 115 120 125  
 Thr Asn Ser Val Val Lys  
 130

<210> 8539  
 <211> 310  
 <212> PRT  
 <213> B.fragilis

<400> 8539  
 Phe Thr Ile Phe Leu Leu Tyr Met Val Asn Tyr Gly Leu Phe Cys Thr  
 1 5 10 15  
 Val Phe Arg Thr Thr Lys Asn His Lys Pro Ile Lys Met Lys Val Ile

20 25 30  
 His Thr Ile Lys Asp Leu Gln Ala Glu Leu Ser Val Leu Lys Ala Gln  
 35 40 45  
 Gly Lys Lys Val Gly Leu Val Pro Thr Met Gly Ala Leu His Ala Gly  
 50 55 60  
 His Ala Ser Leu Val Lys Arg Ser Val Asn Glu Asn Glu Val Thr Val  
 65 70 75 80  
 Val Ser Val Phe Val Asn Pro Thr Gln Phe Asn Asp Lys Asn Asp Leu  
 85 90 95  
 Val Lys Tyr Pro Arg Thr Leu Asp Ala Asp Cys Lys Leu Leu Glu Ala  
 100 105 110  
 Cys Gly Ala Thr Tyr Ala Phe Ala Pro Ser Val Glu Glu Met Tyr Pro  
 115 120 125  
 Glu Pro Asp Thr Arg Gln Phe Ser Tyr Ala Pro Leu Asp Thr Val Met  
 130 135 140  
 Glu Gly Ala Phe Arg Pro Gly His Phe Asn Gly Val Cys Gln Ile Val  
 145 150 155 160  
 Ser Lys Leu Phe Glu Ala Val Lys Pro His Arg Ala Tyr Phe Gly Glu  
 165 170 175  
 Lys Asp Phe Gln Gln Leu Ala Ile Ile Arg Glu Met Val Arg Gln Met  
 180 185 190  
 Gln Phe Asp Leu Glu Ile Val Gly Cys Pro Ile Val Arg Glu Glu Asp  
 195 200 205  
 Gly Leu Ala Leu Ser Ser Arg Asn Ala Arg Leu Ser Ala Glu Glu Arg  
 210 215 220  
 Glu Asn Ala Leu Lys Ile Ser Gln Thr Leu Phe Lys Ser Arg Thr Phe  
 225 230 235 240  
 Ala Ala Thr His Thr Val Ser Glu Thr Leu Lys Phe Val Glu Asp Ala  
 245 250 255  
 Ile Ala Ala Val Pro Gly Leu Arg Leu Glu Tyr Phe Glu Ile Val Asp  
 260 265 270  
 Gly Asn Thr Leu Gln Lys Val Asp Asn Trp Asn Gln Thr Ser Tyr Val  
 275 280 285  
 Val Gly Cys Ile Thr Val Phe Cys Gly Asp Val Arg Leu Ile Asp Asn  
 290 295 300  
 Ile Lys Tyr Lys Glu Ser  
 305 310

&lt;210&gt; 8540

&lt;211&gt; 288

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8540

Asn Arg Leu Ser Leu Leu Arg Ser Ile Ile Cys Asn Met Cys Asn Leu  
 1 5 10 15  
 Ser Asp Glu Ser Lys Gln Phe Glu Met Thr Pro Pro Ser Ser Asn Leu  
 20 25 30  
 Ser Ser Leu Phe Pro Thr Gly Arg Ala Val Arg Asn Pro Leu Gly Lys  
 35 40 45  
 Val Tyr Phe Val Val Ile Leu Lys Gly Lys Ala Met Val Arg Ile Asp  
 50 55 60  
 Gly Lys Ser Met Leu Leu Pro Glu Arg Thr Phe Leu Phe Leu Pro Pro  
 65 70 75 80  
 Gly His Leu Leu Leu Arg Leu Ser Cys Thr Gln Asp Phe Leu Phe Gln  
 85 90 95  
 Tyr Leu Ser Phe Ser Phe Asp Phe Leu Ser Asp Phe Pro Leu Leu Leu  
 100 105 110  
 Lys Ala Asp Ile Ser Asn Gln Val Thr Asn Ala Pro Cys Leu Pro Met

115		120		125
Ser Pro Glu Asp Phe Ser	Leu Ile Lys Met Tyr Tyr	His Phe Ile Tyr		
130		135		140
His Arg Tyr Ser Asp Ala Glu Cys Pro Ser Glu Val Ile Lys Gly Met				
145		150		155
Leu Phe Ser Leu Val Leu Glu Val Cys Arg Met Tyr Ser Gly Arg Asn				
		165		170
Ile Ser Val Glu Met Ser Arg Gln Asp Lys Leu Val Asp Gly Phe Phe				
		180		185
Ser Leu Leu His Lys Tyr Cys Thr Gln Glu Arg Met Ala Ala Phe Tyr				
		195		200
Ala Ser Arg Leu Cys Ile Ser Asp Lys Tyr Leu Met Arg Ser Ile Lys				
		210		215
Lys Gln Thr Gly Gln Thr Phe His Tyr Trp Met Ala Asp Phe Ile Leu				
225		230		235
Arg Glu Ala Lys Leu Met Leu Arg Ser Thr Asp Leu Ser Val Thr Glu				
		245		250
Ile Ala Asp Lys Leu Ser Phe Pro Asn Ser Ser Ser Phe Ala Arg Phe				
		260		265
Phe Arg Lys Tyr Thr Gly Phe Ser Pro Val Gln Phe Arg Asn Glu Ala				
		275		280
				285

&lt;210&gt; 8541

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8541

Lys Thr Val Ser Leu His Pro Glu Lys Met Asn Ile Ile Met Asn Ile				
1	5	10	15	
Asn Ser Lys Ala Lys Gly Phe Val Cys Gly Ala Val Ala Ala Ala Thr				
	20	25	30	
Tyr Gly Met Asn Pro Leu Phe Thr Leu Pro Leu Tyr Lys Glu Gly Met				
	35	40	45	
Ser Val Asp Ser Val Leu Phe Tyr Arg Tyr Gly Phe Ala Val Leu Ile				
	50	55	60	
Leu Gly Ile Leu Met Lys Val Gln Gly Gln Ser Phe Ala Leu Lys Lys				
65	70	75	80	
Asn Glu Val Leu Pro Leu Ile Val Gly Gly Leu Leu Phe Ser Ala Ser				
	85	90	95	
Ser Leu Leu Leu Phe Leu Ser Tyr Lys His Met Asp Ala Gly Ile Ala				
	100	105	110	
Ser Thr Ile Leu Phe Val Tyr Pro Val Met Val Ala Leu Ile Met Phe				
	115	120	125	
Leu Phe Phe His Glu Lys Val Ser Leu Leu Thr Val Phe Cys Ile Leu				
	130	135	140	
Leu Ala Leu Ser Gly Ile Gly Leu Leu Tyr Lys Gly Glu Gly Gly Glu				
145	150	155	160	
Thr Leu Ser Leu Val Gly Met Leu Leu Val Ile Leu Ser Ser Leu Ser				
	165	170	175	
Tyr Ala Val Tyr Ile Val Gly Val Asn His Ser Thr Leu Lys Leu Met				
	180	185	190	
Ser Thr Ala Lys Leu Thr Phe Tyr Ala Leu Leu Phe Gly Leu Ser Ile				
	195	200	205	
Tyr Ile Val Arg Leu Asn Phe Cys Ser Asp Leu Gln Ala Val Pro Ser				
	210	215	220	
Leu Pro Ala Trp Gly Asn Ile Leu Ala Met Ala Phe Leu Pro Thr Val				
225	230	235	240	
Ile Ser Leu Val Cys Thr Ala Val Ser Ile His Thr Ile Gly Ser Thr				

245 250 255  
 Ser Thr Ala Ile Leu Gly Ala Leu Glu Pro Val Thr Ala Leu Phe Phe  
 260 265 270  
 Gly Val Met Ile Phe Gly Glu Arg Leu Thr Pro Arg Leu Met Leu Gly  
 275 280 285  
 Ile Leu Met Ile Leu Val Ala Val Thr Phe Ile Val Val Gly Lys Pro  
 290 295 300  
 Leu Met Thr Phe Leu Lys Glu Glu Val Ala Gly Gly Met Lys Arg Lys  
 305 310 315 320  
 Leu Thr Arg

<210> 8542  
 <211> 269  
 <212> PRT  
 <213> B.fragilis

<400> 8542

Ser Met Gln Ser Phe Arg Val Ile Lys Pro Thr Ala Ala Leu Val Pro  
 1 5 10 15  
 Tyr Val Arg His Tyr Trp Val Leu Ser Asp Asp Ala Leu Ala Pro Val  
 20 25 30  
 Ser Glu Arg Thr Leu Pro Val Gly Cys Val Gln Met Val Phe His Arg  
 35 40 45  
 Gly Arg Gln Leu Phe Ser Leu Thr Glu Gly Arg Leu Gln Pro Ser Ser  
 50 55 60  
 Phe Ile Ser Gly Gln Ala Phe Gly Tyr Ser Asp Val Glu Ser Thr Gly  
 65 70 75 80  
 Met Leu Glu Met Ile Val Val Val Phe Gln Pro Phe Ala Ala Lys Ala  
 85 90 95  
 Phe Leu His Met Pro Val Ser Glu Phe Arg Gly Met Asn Val Asn Thr  
 100 105 110  
 Glu Glu Thr Gly Asp Pro Leu Leu Val Asp Leu Gly Arg Arg Ile Ala  
 115 120 125  
 Asp Met Pro Asp Arg Val Ala Cys Ile Arg Leu Ile Glu Glu Phe Leu  
 130 135 140  
 Leu Ser Arg Leu Tyr Ala Phe Pro Glu Tyr Asn Leu Lys Arg Val Ser  
 145 150 155 160  
 Thr Val Trp Glu Ala Val Asn Leu His Pro His Ile Arg Thr Ala Gln  
 165 170 175  
 Leu Ala Asp Val Ala Cys Leu Ser Asn Lys Gln Phe Gly Arg Val Phe  
 180 185 190  
 Ala Glu Tyr Val Gly Ala Thr Pro Lys Glu Phe Leu Arg Ile Val Arg  
 195 200 205  
 Ile Gln Arg Ala Leu Tyr Thr Leu Gln Cys Gln Pro Gly Ile Ser Phe  
 210 215 220  
 Ala Gln Leu Ala Tyr Glu Cys Gly Phe Phe Asp Gln Ser His Met Ile  
 225 230 235 240  
 Lys Glu Phe Lys Leu Phe Ser Gly Tyr Thr Pro Ala Glu Tyr Leu Ala  
 245 250 255  
 Val Cys Ala Pro Tyr Ser Asp Tyr Phe Ser Val Glu Glu  
 260 265

<210> 8543  
 <211> 165  
 <212> PRT  
 <213> B.fragilis

<400> 8543

Glu Ile Arg Ser Met Lys Gln Gln Glu Thr Asn Pro Asp Ser Leu Ile  
 1 5 10 15  
 Glu Asn Tyr Leu Pro Ala Asp Tyr Tyr Asp Ser Phe Ser Lys Glu Leu  
 20 25 30  
 His Asn Lys Asn Ala Ile Ser Thr Asp Glu Phe Ala Asp Ile Val Phe  
 35 40 45  
 Asn Gln Leu Pro Ser Trp Ile Ile Arg Leu Leu Lys Val Arg Asn Cys  
 50 55 60  
 Ile Val Lys Pro Phe Gly Leu Asn Thr Asn Arg Arg Ile Thr Asp Met  
 65 70 75 80  
 Glu Cys Glu Arg Asn Gln His Glu Ile Ile Phe Gly Met Ser Asp Lys  
 85 90 95  
 His Leu Thr Phe Tyr Val Ser Leu Trp Cys Lys Val Ser Glu Ala Asn  
 100 105 110  
 Ser Gln Thr Leu Arg Ile Thr Thr Ile Val Lys Tyr His Asn Arg Leu  
 115 120 125  
 Gly Lys Leu Tyr Phe Phe Val Val Arg Pro Phe His Lys Val Ile Ile  
 130 135 140  
 Arg Ser Leu Leu Glu Arg Val Glu Lys Arg Tyr Lys Leu Ile Ser Leu  
 145 150 155 160  
 Glu Arg Glu Ala Ser  
 165

<210> 8544  
 <211> 291  
 <212> PRT  
 <213> B.fragilis

<400> 8544  
 Lys Ile Asp Pro Asn Ser Phe Ser Tyr Leu Cys Val Leu Trp Arg His  
 1 5 10 15  
 Lys Ser Asp Asn Tyr Lys Ala Ala Asn Asp Arg Asn Thr Glu Lys Gln  
 20 25 30  
 Lys Ser Ala Tyr Arg Met Asn Thr Pro Leu Gln Pro Tyr Arg Ile Gly  
 35 40 45  
 Asn Ser Thr Leu Leu Ser Asn Arg Lys Thr Thr Ala Phe Leu Cys Ser  
 50 55 60  
 Arg Gln Val Pro Glu Asn Lys Ile Pro Pro Ile Tyr Asn Trp Ile Asn  
 65 70 75 80  
 Gln Leu Ser Pro Glu Lys Asp Cys Ile Leu Cys Gly Asn His Ser Arg  
 85 90 95  
 Met Glu Gln Glu Val Phe Asn Ile Leu Leu Glu Lys Lys Ile Pro Val  
 100 105 110  
 Ile Leu Ala Leu Ala Glu Gly Met Lys Lys Glu Trp Asp Asn Lys Val  
 115 120 125  
 Lys Leu Ala Leu Glu Glu Asn Arg Met Leu Ile Val Thr Thr Cys Asp  
 130 135 140  
 Asp Lys Ile His Arg Ile Asn His Gln Ser Ala Tyr Asp Arg Asn Glu  
 145 150 155 160  
 Thr Ile Leu Ser Leu Ala Asp Asp Ile Ile Gly Tyr Cys Thr Pro  
 165 170 175  
 Gly Gly Asn Ile Asp Arg Gln Thr Lys Gly Lys Thr Asn Ile Thr Tyr  
 180 185 190  
 Leu Gln Lys Ser Asp Tyr Leu Ser Thr Glu Leu Ile Phe Thr Asp Lys  
 195 200 205  
 Val Ala Asp Ser Asp Val Met Ile Tyr Arg Thr Ser Thr Lys Lys Gly  
 210 215 220  
 Lys Ile Phe Leu Asp Ile Lys Gln Glu Ser Ser Gly Gln Glu Tyr Leu  
 225 230 235 240

Lys Ile Thr Gln Ser Lys Pro Gln Gly Asn Ser Ala Phe His Arg Glu  
 245 250 255  
 Thr Ile Phe Ile Asp Lys Asn Glu Val Leu Gln Phe Lys Glu Glu Leu  
 260 265 270  
 Glu Lys Val Ile Asp Tyr Trp Lys Ile Ser Thr Ile Lys Lys Asn Gln  
 275 280 285  
 Thr Pro Ile  
 290

<210> 8545

<211> 430

<212> PRT

<213> B.fragilis

<400> 8545

Arg Gln Val Pro Thr Ile Pro Arg Ile Asp Met Val Tyr Asp Ala Phe  
 1 5 10 15  
 Lys Ala Tyr Val Ile Gly Gly Lys Ala Pro Asp Thr Ile Ser Glu Val  
 20 25 30  
 Val Lys Asp Ile Tyr Thr Tyr Ser Gly Tyr Tyr Val Asn Met Val Leu  
 35 40 45  
 His Lys Glu Pro Asp Lys Leu Cys Gly Ala Phe Lys Arg Ile Ser  
 50 55 60  
 Gln Leu Arg Val Asp Val Ser Tyr Pro Phe Leu Leu Pro Leu Tyr Asn  
 65 70 75 80  
 Asp Tyr Val Asn Glu Val Ile Ser Arg Asp Glu Phe Tyr Glu Ala Leu  
 85 90 95  
 Cys Leu Val Glu Asn Tyr Val Phe Arg Arg Ala Ile Cys Gly Ile Pro  
 100 105 110  
 Thr Asn Ser Leu Asn Lys Thr Phe Ala Thr Leu Tyr Lys Ser Phe Asp  
 115 120 125  
 Lys Ala Asn Tyr Met Asp Gly Leu Lys Ala Ala Phe Leu Leu Leu Asp  
 130 135 140  
 Ser Tyr Lys Arg Phe Pro Asn Asp Thr Glu Phe Thr Thr Phe Leu Gln  
 145 150 155 160  
 Thr Lys Asp Val Tyr Asn Phe Arg Asn Arg Asn Tyr Leu Leu Asn Arg  
 165 170 175  
 Leu Glu Asn Phe Gln Arg Lys Glu Met Val Asn Ile Ser Asp Tyr Thr  
 180 185 190  
 Ile Glu His Val Met Pro Gln Asn Pro Asn Leu Ser His Glu Trp Gln  
 195 200 205  
 Glu Met Leu Gly Glu Gly Trp Val Glu Val Gln Gly Lys Tyr Leu His  
 210 215 220  
 Thr Leu Gly Asn Leu Thr Leu Thr Gly Tyr Asn Ser Glu Leu Ser Asp  
 225 230 235 240  
 Arg Pro Phe Gln Glu Lys Lys Ser Met Glu Gly Gly Phe Asp Asp Ser  
 245 250 255  
 Pro Ile Arg Leu Asn Ser Tyr Leu Arg Arg Ile Ser Ser Trp Asn Glu  
 260 265 270  
 Glu Gln Ile Leu Val Arg Ala Gly Gln Leu Ala Glu Lys Ala Lys Glu  
 275 280 285  
 Ile Trp Arg Phe Pro Leu Leu Ser Pro Glu Thr Leu Glu Val Tyr Arg  
 290 295 300  
 Ser Ala Glu Arg Asp Pro Ala Glu Tyr Thr Leu Glu His Tyr Glu Tyr  
 305 310 315 320  
 Leu Lys Gly Asp Ile Leu Thr Leu Phe Gln Ala Leu Arg Arg Arg Ile  
 325 330 335  
 Met Asn Ile Asp Pro Ser Val Lys Glu Glu Leu Lys Lys Leu Tyr Ile  
 340 345 350

Ala Phe Lys Ala Tyr Thr Asn Phe Val Asp Val Val Pro Gln Lys Ser  
 355 360 365  
 Arg Leu Arg Leu Ser Leu Asn Val Ala Phe Ala Asp Ile Leu Asp Pro  
 370 375 380  
 Lys Gly Leu Cys Lys Asp Val Ser Asn Leu Gly Arg Trp Gly Asn Gly  
 385 390 395 400  
 Asp Val Glu Val Gly Ile Ser Asn Met Asn Glu Leu Asp Asp Ile Met  
 405 410 415  
 Glu Leu Ile Gln Gln Ala Phe Asp Lys Gln Met Glu Ala Asn  
 420 425 430

<210> 8546  
 <211> 283  
 <212> PRT  
 <213> B.fragilis

<400> 8546  
 Ile Leu Ser Pro Met Ile Glu Ala Pro Glu Ala Arg Leu Leu Cys Glu  
 1 5 10 15  
 Gln Leu Asn Lys Thr Val Cys Gly Lys Arg Ile Thr Asp Val Phe Ala  
 20 25 30  
 Gln Tyr Thr Pro His Lys Phe Ala Trp Phe Tyr Gly Lys Pro Glu Glu  
 35 40 45  
 Cys Ala Glu Arg Leu Val Gly Lys Thr Ile Asp Arg Ala Cys Pro Gln  
 50 55 60  
 Gly Gly Met Val Glu Leu Thr Ala Gly Asp Thr Met Leu Val Leu Thr  
 65 70 75 80  
 Asp Gly Val Asn Leu Arg Tyr Phe Glu Pro Gly Ala Lys Leu Pro Ser  
 85 90 95  
 Lys His Gln Leu Leu Val Ala Phe Asp Asp Glu Ser Cys Leu Leu Ala  
 100 105 110  
 Ser Val Arg Met Tyr Gly Ala Leu Leu Cys Phe Thr Gln Gly His Phe  
 115 120 125  
 Asp Ala Pro Leu Ala Ala Tyr Tyr Glu Thr Ala Arg Thr Lys Pro Gln  
 130 135 140  
 Val Met Thr Asp Ala Phe Asp Lys Glu Tyr Phe Leu Gly Leu Val Asn  
 145 150 155 160  
 Ala Pro Glu Ala Gln Lys Lys Pro Ala Lys Ala Phe Leu Ala Thr Glu  
 165 170 175  
 Gln Thr Ile Pro Gly Leu Gly Asn Gly Val Leu Gln Asp Ile Leu Tyr  
 180 185 190  
 His Ala His Ile His Pro Lys Thr Lys Ile Asp Lys Leu Gly Ala Lys  
 195 200 205  
 Glu Lys Glu Lys Met Tyr Glu Gln Val Lys Glu Thr Leu Gln Asp Ile  
 210 215 220  
 Tyr His Leu Gly Gly Arg Ser Thr Glu Thr Asp Leu Phe Gly Val Pro  
 225 230 235 240  
 Gly Gln Tyr Val Ala Ser Leu Ser Lys Asp Thr Ala Gly His Val Cys  
 245 250 255  
 Pro Lys Cys Gly Glu Thr Ile Val Lys Glu Asn Tyr Leu Gly Gly Ser  
 260 265 270  
 Ile Tyr Tyr Cys Arg Gly Cys Gln Val Met Lys  
 275 280

<210> 8547  
 <211> 338  
 <212> PRT  
 <213> B.fragilis



&lt;400&gt; 8547

Ile Ser Ser Pro Arg Val Lys Thr Phe Ser Trp Glu Leu Asp Leu Trp  
 1 5 10 15  
 Gly Asn Leu Arg Trp Ala Arg Ser Ala Ser Ile Ala Glu Tyr Leu Gln  
 20 25 30  
 Ser Val Glu Ala Gln Arg Ala Leu Arg Met Thr Ile Ile Ala Glu Val  
 35 40 45  
 Ala Gln Ala Tyr Tyr Glu Leu Val Ala Leu Asp Thr Glu Leu Asp Ile  
 50 55 60  
 Val Arg Gln Thr Leu Lys Ala Arg Glu Glu Gly Met Arg Leu Ala Arg  
 65 70 75 80  
 Ile Arg Phe Glu Gly Gly Leu Thr Ser Glu Thr Ser Tyr Arg Gln Ser  
 85 90 95  
 Gln Val Glu Leu Ala Arg Thr Ala Thr Leu Val Pro Asp Leu Glu Arg  
 100 105 110  
 Lys Ile Ser Leu Lys Glu Asn Asp Ile Ala Phe Leu Ala Gly Glu Tyr  
 115 120 125  
 Pro Asn Lys Ile Thr Arg Ser Arg Leu Leu Gln Glu Phe Asn Phe Pro  
 130 135 140  
 Gln Glu Leu Pro Val Gly Leu Pro Ser Gly Leu Leu Glu Arg Arg Pro  
 145 150 155 160  
 Asp Ile Arg Gln Ala Glu Gln Lys Leu Ile Ala Ala Asn Ala Arg Val  
 165 170 175  
 Gly Val Ala Tyr Thr Asn Met Phe Pro Arg Ile Ser Leu Thr Gly Arg  
 180 185 190  
 Val Gly Ser Glu Ser Thr Ala Leu Ser Glu Leu Leu Lys Ser Pro Tyr  
 195 200 205  
 Ser Ile Met Glu Gly Ala Leu Leu Thr Pro Ile Phe Gly Trp Gly Lys  
 210 215 220  
 Asn Arg Ala Ala Leu Lys Ala Lys Lys Ala Ala Tyr Glu Ala Glu Val  
 225 230 235 240  
 His Ser Tyr Glu Lys Ala Val Leu Thr Ala Phe Lys Glu Thr Arg Asn  
 245 250 255  
 Ser Ile Val Asn Phe Asn Lys Ile Lys Glu Val Tyr Asp Leu Arg Ala  
 260 265 270  
 Lys Leu Glu Arg Ser Ala Lys Ser Tyr Val Asp Leu Ala Gln Leu Gln  
 275 280 285  
 Tyr Ile Asn Gly Val Thr Asn Tyr Leu Asp Val Leu Asp Ala Gln Arg  
 290 295 300  
 Gly Tyr Phe Asp Ala Gln Ile Gly Leu Ser Asn Ala Ile Arg Asp Glu  
 305 310 315 320  
 Leu Ile Ala Val Val Gln Val Tyr Lys Ala Leu Gly Gly Gly Trp Gln  
 325 330 335  
 Val Gln

&lt;210&gt; 8548

&lt;211&gt; 560

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8548

Val Arg Ile Thr Asn Thr Phe Lys Tyr Lys Ile Lys Lys Met Thr Lys  
 1 5 10 15  
 Ser Ala Leu Gln Ile Ala Arg Ala Ala Tyr Gln Pro Lys Leu Pro Lys  
 20 25 30  
 Ala Leu Lys Gly Ser Val Lys Ala Val Glu Gly Ala Ala Thr Gln Ser  
 35 40 45  
 Val Ala Asp Gln Glu Ala Ile Gln Lys Leu Phe Pro Asn Thr Tyr Gly

50	55	60
Met Pro Leu Ile Lys	Phe Glu Glu Gly Glu Ala Ile Gln Leu Pro Ala	
65	70	75
Met Asn Val Gly Val	Ile Leu Ser Gly Gly Gln Ala Pro Gly Gly His	80
	85	90
Asn Val Ile Ser Gly	Leu Phe Asp Gly Ile Lys Thr Leu Asn Lys Asp	95
	100	105
Asn Lys Leu Tyr Gly	Phe Ile Leu Gly Pro Gly Gly Leu Val Asp His	110
	115	120
Asn Tyr Met Glu Leu Thr	Ala Asp Ile Ile Asp Glu Tyr Arg Asn Thr	125
	130	135
Gly Gly Phe Asp Ile	Ile Gly Ser Gly Arg Thr Lys Leu Glu Thr Pro	140
145	150	155
Glu Gln Phe Glu Lys	Gly Leu Glu Ile Ile Asn Lys Leu Gly Ile Lys	160
	165	170
Ala Leu Val Ile Ile	Gly Gly Asp Asp Ser Asn Thr Asn Ala Cys Val	175
	180	185
Leu Ala Glu Tyr Tyr	Ala Ala Lys Asn Ala Gly Val Gln Val Ile Gly	190
	195	200
Cys Pro Lys Thr Ile	Asp Gly Asp Leu Lys Asn Glu Met Ile Glu Thr	205
210	215	220
Ser Phe Gly Phe Asp	Thr Ala Cys Lys Val Tyr Ser Glu Val Ile Gly	225
	230	235
Asn Ile Gln Arg Asp	Cys Asn Ser Ala Arg Lys Tyr Trp His Phe Ile	240
	245	250
Lys Leu Met Gly Arg	Ser Ala Ser His Ile Ala Leu Glu Cys Ala Leu	255
	260	265
Gln Val Gln Pro Asn	Val Cys Ile Ile Ser Glu Glu Val Glu Ala Lys	270
	275	280
Asp Met Ser Leu Asp	Asp Val Val Thr Tyr Ile Ala Lys Ile Val Ala	285
290	295	300
Asp Arg Ala Ala Gln	Gly Asn Asn Phe Gly Thr Val Leu Ile Pro Glu	305
	310	315
Gly Leu Val Glu Phe	Ile Pro Ala Met Lys Arg Leu Ile Ala Glu Leu	320
	325	330
Asn Asp Phe Leu Ala	Ala Asn Ala Val Glu Phe Ala Asn Ile Lys Arg	335
	340	345
Ser Arg Gln Arg Glu	Tyr Ile Ile Ser Lys Leu Ser Lys Glu Asn Ala	350
	355	360
Glu Ile Tyr Ala Ser	Leu Pro Glu Gly Val Ala Arg Gln Leu Ser Leu	365
370	375	380
Asp Arg Asp Pro His	Gly Asn Val Gln Val Ser Leu Ile Glu Thr Glu	385
	390	395
Lys Leu Leu Ser Glu	Met Val Gly Thr Lys Leu Ala Gln Trp Lys Glu	400
	405	410
Glu Gly Lys Tyr Val	Gly Lys Phe Ala Ala Gln His His Phe Phe Gly	415
	420	425
Tyr Glu Gly Arg Cys	Ala Ala Pro Ser Asn Tyr Asp Ala Asp Tyr Cys	430
	435	440
Tyr Ser Leu Gly Tyr	Thr Ala Ser Met Leu Ile Ala Asn Gly Lys Thr	445
	450	455
Gly Tyr Met Ser Ser	Val Arg Asn Thr Thr Ala Pro Ala Ala Glu Trp	460
465	470	475
Ile Ala Gly Gly Val	Pro Ile Thr Met Met Asn Met Glu Arg Arg	480
	485	490
His Gly Glu Met Lys	Pro Val Ile Gln Lys Ala Leu Val Lys Leu Asp	495
	500	505
Gly Lys Pro Phe Leu	Thr Phe Ala Ala Lys Arg Asp Gln Trp Ala Leu	510
	515	520
		525

Asn Thr Asp Tyr Val Tyr Pro Gly Pro Ile Gln Tyr Phe Gly Pro Thr  
 530 535 540  
 Glu Val Cys Asp Gln Pro Thr Lys Thr Leu Gln Leu Glu Gln Ala Lys  
 545 550 555 560

<210> 8549  
 <211> 968  
 <212> PRT  
 <213> B.fragilis

<400> 8549

Lys Gly Asn Thr Ser Glu Val Phe Tyr Glu Asn Lys Ile Cys Ile Ser  
 1 5 10 15  
 Phe Val Leu Phe Ile Leu Cys Leu Ile Tyr Pro Asn Asn Met Lys Lys  
 20 25 30  
 His Leu Ile Leu Met Ile Ser Ala Ala Ile Ile Pro Leu Leu Leu Tyr  
 35 40 45  
 Ala Cys Ser Ala Glu Glu Glu Arg Ala Leu Thr Ser Thr Thr Leu Glu  
 50 55 60  
 Val Ala Gln Ser Ala Ile Asp Phe Lys Ser Asp Ala Gly Thr Arg Asp  
 65 70 75 80  
 Ile Ala Ile Val Thr Asn Ala Asp His Trp Thr Ala Arg Ser Asp Lys  
 85 90 95  
 Asp Trp Cys Ser Val Ala Val Asn Glu Ser Thr Leu Thr Val Asn Val  
 100 105 110  
 Ser Gly Tyr Asp Gly Lys Glu Thr Arg Glu Ala Val Ile Lys Val Thr  
 115 120 125  
 Ala Asp Gly Leu Ala Glu Thr Val Asn Val Arg Gln Leu Gly Ser Glu  
 130 135 140  
 Pro Ala Ile Leu Ile Ser Gln Gln Ile Phe Thr Val Glu Ala Ser Gly  
 145 150 155 160  
 Ser Asp Ile Ala Phe Asp Val Thr Thr Asn Val Ser Val Thr Ile Thr  
 165 170 175  
 Leu Pro Glu Trp Ile Lys Glu Lys Pro Ala Gly Thr Arg Ala Ser Glu  
 180 185 190  
 Met Val Thr Thr Thr His Asn Tyr Ile Val Thr Ala Asn Pro Glu Asp  
 195 200 205  
 Ser Glu Arg Thr Gly Asn Ile Thr Val Lys Glu Val Gly Gly Glu Leu  
 210 215 220  
 Glu Ala Leu Val Ser Val Thr Gln Lys Gly Leu Gly Glu Tyr Glu Ser  
 225 230 235 240  
 Gly Asn Leu Glu Gly Ile Lys Asp Asp Ile Lys Val Pro Val Glu Ser  
 245 250 255  
 Gly Glu Ala Ser Ser Phe Gln Gly Gly Ser Asn Ile Asp Lys Ser Phe  
 260 265 270  
 Asp Gly Asp Met Ser Thr Ile Tyr His Ser Asn Trp Asn Asn Ala Gly  
 275 280 285  
 Asp His Tyr Phe Pro Ile Thr Leu Thr Tyr Asn Phe Ala Ala Gly Ser  
 290 295 300  
 Asp Met Asp Tyr Leu Ile Tyr Tyr Pro Arg Thr Ser Gly Pro Asn Gly  
 305 310 315 320  
 Asn Phe Lys Glu Val Glu Ile Arg Val Lys Ser Asn Ala Asn Thr Arg  
 325 330 335  
 Gly Thr Asp Glu Trp Asn Thr Val Met Thr Lys Asn Phe Gly Gly Thr  
 340 345 350  
 Asn Ala Ala Val Arg Val Asn Phe Pro Lys Ala Gln Ile Gly Val Thr  
 355 360 365  
 Ser Val Gln Phe Ile Val Lys Ser Gly Ser Gly Asp Gly Gln Gly Phe  
 370 375 380

Ala	Ala	Cys	Ala	Glu	Met	Glu	Phe	Tyr	Lys	Lys	Asn	Pro	Asp	Ala	Phe
385					390					395					400
Asp	Pro	Leu	Thr	Leu	Phe	Thr	Asp	Gly	Thr	Cys	Ser	Glu	Leu	Lys	Pro
				405					410					415	
Gly	Leu	Thr	Asp	Glu	Glu	Ile	Glu	Asn	Cys	Pro	Tyr	Ser	Phe	Tyr	Lys
			420					425					430		
Asn	Ile	Ala	Tyr	Tyr	Met	Lys	Gln	Gly	Lys	Tyr	Pro	Ala	Glu	Phe	Arg
		435					440					445			
Ile	Gln	Glu	Tyr	Lys	Ala	Trp	Pro	His	Pro	Asp	Ala	Gln	Ser	Glu	Thr
	450					455					460				
His	Lys	Thr	Ser	Pro	Tyr	Ser	Leu	Arg	Asp	Asn	Pro	Thr	Gly	Ile	Ser
465				470						475					480
Val	Lys	Asp	Gly	Glu	Gln	Leu	Met	Ile	Phe	Val	Gly	Asp	Thr	His	Gly
			485						490					495	
Gln	Thr	Val	Ser	Ala	Val	Ile	Gln	Asn	Leu	Asp	Val	Pro	Gly	Gly	Asp
			500					505					510		
Gly	Phe	Gly	Gly	Thr	Ser	Tyr	Pro	Leu	Ser	Glu	Gly	Ala	Asn	Lys	Ile
		515					520					525			
Thr	Ala	Arg	Asn	Lys	Gly	Leu	Met	Tyr	Ile	Leu	Tyr	His	Thr	Pro	Asp
	530					535					540				
Tyr	Glu	Thr	Ala	Gln	Pro	Val	Lys	Ile	His	Ile	Ala	Ser	Gly	Gln	Val
545				550						555					560
Asn	Gly	Tyr	Phe	Asp	Val	Ala	Lys	His	Gln	Ala	Ser	Asp	Trp	Asn	Lys
			565						570					575	
Leu	Leu	Ser	Asn	Ala	Val	Asp	Lys	Tyr	Phe	Asp	Val	Val	Gly	His	Tyr
		580						585					590		
Ala	His	Leu	Thr	Phe	Pro	Thr	Glu	Arg	Phe	Arg	Thr	His	Thr	Pro	Asp
		595					600					605			
Gly	Lys	Ala	Leu	Ile	Asp	Ala	Tyr	Asp	Gln	Ile	Val	Asn	Ser	Glu	Met
	610					615					620				
Glu	Leu	Met	Gly	Leu	Tyr	Lys	Tyr	Asn	Lys	Leu	Phe	Lys	Asn	Arg	Met
625				630						635					640
Tyr	Leu	His	Val	Met	Tyr	Thr	Ser	Tyr	Met	Tyr	Ala	Thr	Ser	Tyr	His
			645							650				655	
Thr	Ala	Tyr	Asn	Asp	Gly	Thr	Leu	Ala	Glu	Leu	Cys	Asn	Val	Asp	Lys
			660						665				670		
Leu	Lys	Thr	Ser	Ala	Cys	Trp	Gly	Pro	Ala	His	Glu	Ile	Gly	His	Cys
		675					680					685			
Asn	Gln	Thr	Arg	Pro	Gly	Leu	Lys	Trp	Leu	Gly	Thr	Thr	Glu	Val	Thr
	690					695					700				
Asn	Asn	Ile	Met	Ser	Glu	Tyr	Ile	Gln	Thr	Thr	Ile	Phe	Gly	Gln	Pro
705				710						715					720
Ser	Arg	Leu	Gln	Thr	Glu	Asp	Met	Gly	Asp	Gly	Ser	Arg	Asn	Arg	Tyr
			725						730					735	
Ser	Lys	Ala													

850		855		860
Val Glu Ala Leu Gly Tyr Pro Lys Pro Asp	Val Ala Leu Glu Tyr Ile			
865		870		880
Thr Asp Asn Ser Val Glu Leu Tyr Lys Asp Lys Pro Gly Ile Val Ala				
	885		890	895
Gly Thr Ala Thr Arg Ser Gly Ser Thr Phe Thr Met Thr Asn Trp Lys				
	900		905	910
Asn Val Ala Ala Tyr Glu Val Val Asp Glu Thr Gly Lys Lys Val Cys				
	915		920	925
Ile Ser Asp Gly Leu Leu Ala Pro Ser Gly Thr Ala Thr Phe Thr Met				
	930		935	940
Lys Thr Ala Trp Lys Asp Gly Phe Lys Val Tyr Ala Val Ser Ala Thr				
945		950		955
Gly Ala Arg Thr Ala Val Thr Phe				960
	965			

&lt;210&gt; 8550

&lt;211&gt; 176

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8550

Thr Ile Lys Thr Ile Tyr Ser Glu Leu Thr Leu Leu Thr Gly Lys Gln				
1	5	10	15	
Tyr Thr Ile Met Asn Leu Leu Ile Ile Ser Asn Ala Asp Ser Cys Arg				
	20	25	30	
Ser Arg Ile Ala Gln Ala Leu Leu Ser Ser Phe Gly Lys Gly Met Lys				
	35	40	45	
Val Tyr Ser Ala Gly Thr Met Pro Ala Ala Glu Ile His Pro Leu Val				
	50	55	60	
Leu Lys Leu Ile Lys Glu Thr Gly Ile Glu Pro Asn Thr Gln Pro Pro				
65	70	75	80	
His Ser Ile Arg Glu Tyr Thr Asn Glu Asn Trp Asp His Ile Ile Val				
	85	90	95	
Leu Ser Gly Thr Ala Asp Asp Ile Arg Asn Leu Phe Arg Lys Glu Val				
	100	105	110	
Lys His Trp Tyr His Leu Pro Phe Glu Asp Leu Phe Ser Thr Ala Ala				
	115	120	125	
Pro Ser Glu Ala Glu Leu Trp Asp Arg Leu Ile Arg Leu Lys Glu Asp				
	130	135	140	
Ile Gln Arg Lys Met Tyr Glu Leu Tyr Arg Asp Asp Leu Arg Glu Gln				
145	150	155	160	
Leu Leu Pro Arg Cys Ser Cys Gly Ala Asn Asp Phe Cys Arg Cys Glu				
	165	170	175	

&lt;210&gt; 8551

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8551

Lys Arg Leu Thr Asp Ser Ala Glu Gln Ala Lys Arg Val Arg Ser Ala				
1	5	10	15	
Met Glu Leu Gln Lys Gln Gly Cys Lys Leu Arg Ala Leu Arg Leu Leu				
	20	25	30	
Cys Gly Ile Pro Val Glu Asn Lys Ile Ile Ile Phe Phe His Asn Ser				
	35	40	45	
Glu Lys Asn Thr Lys Phe Ala Thr Leu Leu Ser Ser Asn Tyr				
	50	55	60	

<210> 8552  
 <211> 395  
 <212> PRT  
 <213> B.fragilis

<400> 8552

Pro	Phe	Tyr	Leu	Ser	Glu	Ser	Ile	Asp	Ser	Leu	Thr	Asn	Ala	Phe	Phe
1				5					10					15	
Glu	Thr	Met	Ser	Gly	Phe	Thr	Thr	Thr	Gly	Ala	Thr	Ile	Leu	Asp	Asp
			20					25					30		
Ile	Glu	Ser	Leu	Ser	His	Gly	Met	Leu	Phe	Trp	Arg	Ser	Leu	Thr	Gln
		35					40					45			
Trp	Ile	Gly	Gly	Leu	Gly	Ile	Val	Phe	Phe	Thr	Ile	Ala	Val	Leu	Pro
	50					55					60				
Val	Phe	Thr	Ser	Gly	Gly	Val	Gln	Leu	Phe	Ser	Ala	Glu	Ser	Thr	Gly
65					70					75					80
Val	Thr	His	Asp	Arg	Thr	His	Pro	Lys	Ile	Asn	Val	Met	Ala	Lys	Trp
			85					90						95	
Leu	Trp	Thr	Val	Tyr	Leu	Ile	Leu	Thr	Leu	Ala	Glu	Thr	Ile	Leu	Leu
			100					105					110		
Met	Leu	Gly	Gly	Met	Ser	Leu	Phe	Asp	Ala	Val	Cys	Gln	Ser	Phe	Ala
		115					120					125			
Thr	Thr	Ala	Thr	Gly	Gly	Tyr	Ser	Thr	Lys	Gln	Ala	Ser	Ile	Ser	Tyr
	130					135					140				
Trp	Asn	Ser	Pro	Phe	Ile	Glu	Tyr	Val	Val	Ala	Ile	Phe	Met	Leu	Leu
145					150					155					160
Ser	Gly	Val	Asn	Phe	Ala	Leu	Phe	Leu	Met	Cys	Leu	Arg	Gly	Lys	Val
			165						170					175	
Ser	Arg	Leu	Leu	Arg	Asp	Glu	Glu	Leu	Arg	Trp	Phe	Leu	Gly	Ser	Val
			180					185					190		
Ala	Ile	Leu	Thr	Phe	Leu	Ile	Thr	Phe	Ala	Leu	Val	Phe	Gln	Asn	His
		195					200					205			
Tyr	Asp	Trp	Glu	Thr	Ala	Phe	Arg	Lys	Ser	Leu	Phe	Gln	Val	Ala	Thr
	210					215					220				
Ala	His	Thr	Ser	Cys	Gly	Phe	Ala	Thr	Asp	Asp	Tyr	Asn	Leu	Trp	Pro
225					230					235					240
Ala	Phe	Thr	Trp	Leu	Leu	Leu	Ile	Ala	Met	Leu	Ser	Gly	Gly	Cys	
			245					250					255		
Thr	Gly	Ser	Thr	Ser	Gly	Gly	Ile	Lys	Asn	Met	Arg	Leu	Leu	Ile	Ile
			260					265					270		
Ala	Arg	Ser	Ile	Arg	Asn	Glu	Phe	Lys	His	Leu	Leu	His	Pro	Asn	Ala
		275					280					285			
Val	Leu	Pro	Val	Arg	Val	Asn	Lys	Gln	Ser	Val	Ser	Pro	Ser	Ile	Val
	290					295					300				
Ser	Thr	Val	Gly	Met	Phe	Phe	Ala	Phe	Tyr	Leu	Ile	Ile	Val	Ile	Leu
305					310					315					320
Gly	Trp	Ala	Val	Leu	Leu	Phe	Leu	Gly	Val	Gly	Phe	Ser	Glu	Ser	Ile
			325					330						335	
Gly	Thr	Val	Ile	Ser	Ser	Ile	Gly	Asn	Val	Gly	Pro	Gly	Leu	Gly	Ser
		340					345						350		
Cys	Gly	Pro	Ala	Tyr	Ser	Trp	Asn	Gly	Leu	Pro	Asp	Ala	Ala	Lys	Trp
		355					360					365			
Val	Leu	Ser	Phe	Leu	Met	Leu	Ile	Gly	Arg	Leu	Glu	Leu	Phe	Ser	Val
	370					375					380				
Leu	Leu	Leu	Phe	Tyr	Pro	Gly	Phe	Trp	Lys	Ser					
385					390					395					

<210> 8553

<211> 250  
 <212> PRT  
 <213> B.fragilis

<400> 8553

Leu Leu Tyr Phe Leu Cys Asp Ile Ala Leu Val Pro Leu Glu Leu Trp  
 1 5 10 15  
 Tyr Ile Ala Ala Ser Val Ala Leu Val Ile Val Gly Gly Leu Trp  
 20 25 30  
 Met His Leu Asn Glu Gly Ser Thr Pro Met Asp Lys Tyr Ile Glu Ile  
 35 40 45  
 Thr Ala Gln Lys Ser Arg Met Tyr Leu Leu Pro Asp Ser Ser Lys Val  
 50 55 60  
 Trp Met Gln Pro Gly Ser Ser Ile Arg Phe Ala Glu Asp Phe Lys Lys  
 65 70 75 80  
 His Arg Asn Val Trp Leu Lys Gly Asn Ser Leu Phe Glu Val His Lys  
 85 90 95  
 Asn Met Gly Arg Lys Phe Arg Val Tyr Ile Asp Lys Ala Phe Ile Glu  
 100 105 110  
 Val Lys Gly Thr Cys Phe Leu Ile Lys Gln Asn Asn Pro Ser Ala Asn  
 115 120 125  
 Glu Ile Thr Leu Phe Asn Gly Ser Ile Glu Phe Asn Val Glu Ser Thr  
 130 135 140  
 Gln His Lys Ile Glu Met Lys Pro Leu Gln Glu Leu Val Tyr Asn Pro  
 145 150 155 160  
 Ala Asp Ala Gly Thr Gln Leu Arg Gln Ile Glu Asn Ile Glu Trp Gln  
 165 170 175  
 Asn Gly Arg Tyr Asn Phe Thr Gln Phe Asn Leu Glu His Leu Thr Arg  
 180 185 190  
 Ile Ile Asn Gln Met Tyr Gly Ser Arg Ile Ile Ile Ser Asp Lys Val  
 195 200 205  
 Asn Lys Asn Cys Ala Phe Thr Gly Ser Ile Arg Tyr Asp Glu Ser Leu  
 210 215 220  
 Glu Asp Val Ile Asp Lys Ile Cys Phe Ser Leu Asn Leu Arg Lys Lys  
 225 230 235 240  
 Glu Ile Asn His Glu Ile Ile Ile Tyr Asn  
 245 250

<210> 8554  
 <211> 316  
 <212> PRT  
 <213> B.fragilis

<400> 8554

Ser Met Lys Ala Ser Ser Asn Asn Leu Leu Ser Ile Ile Lys Gly Pro  
 1 5 10 15  
 Arg Gln Phe Val Ile Pro Ile Tyr Gln Arg Thr Tyr Ser Trp Gln Leu  
 20 25 30  
 Val Gln Cys Asn Gln Leu Leu Asn Asp Ile Leu Arg Ile Ser Asn Asp  
 35 40 45  
 Ser Ala Val Gln Gly His Phe Ile Gly Ser Ile Val Tyr Phe Gln Glu  
 50 55 60  
 Ser Ile His Thr Val Ser Asp Val Pro Lys Leu Leu Val Ile Asp Gly  
 65 70 75 80  
 Gln Gln Arg Leu Thr Thr Val Ser Leu Leu Ile Ala Ala Ile Ala Asp  
 85 90 95  
 Phe Ile Lys Glu Asn Ala Val Glu Ile Asp Thr Ser Phe Thr Lys Leu  
 100 105 110  
 Gln Asn Tyr Tyr Leu Ile Asn Pro Glu Glu Asp Asn Glu Leu Arg Tyr

	115		120		125
Lys	Leu	Leu	Leu	Thr	Arg
	130		135		140
Lys	Gly	Ile	Pro	Arg	Ser
145			150		155
Tyr	Asp	Phe	Phe	Lys	Ser
		165		170	
Tyr	Ser	Gly	Val	Gln	Arg
	180		185		190
Glu	Lys	Asp	Asn	Pro	Gln
	195		200		205
Leu	Asp	Leu	Ser	Gln	Ala
	210		215		220
Gln	Glu	Val	His	Leu	Gln
225			230		235
Met	Glu	Gln	Gly	Tyr	Gly
		245		250	
Met	Arg	Asp	Tyr	Leu	Ser
	260		265		270
Arg	Tyr	Gly	Val	Arg	Cys
	275		280		285
Ser	Arg	Tyr	Tyr	Gln	Arg
	290		295		300
Ile	Leu	Arg	Gln	His	Gly
305			310		315

&lt;210&gt; 8555

&lt;211&gt; 431

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8555

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5				10						15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
		20						25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65				70						75				80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
			85					90						95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
		100					105						110		
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile
	115					120						125			
Asn	Ala	Leu	Val	Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp
	130					135					140				
Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Ala	Lys
145				150						155					160
Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr	Arg	Pro	Gly	Val	Tyr	Val	Ile
			165					170						175	
Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn	Ser	Asp	Gly	Asn	Thr	Asn	Val
		180					185					190			
Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe	Phe	Ala	Leu	Leu	Glu
	195					200						205			
Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala	Asp	Cys	Gly	Ser	Cys



210		215		220
Ser Lys Glu Ile Val	Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr			
225	230	235	240	
Ile Arg Ala Asn Arg	Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu			
	245	250	255	
Arg Gly Trp Lys Thr	Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn			
	260	265	270	
Ser Ile Leu Val Glu	Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile			
	275	280	285	
Gln Arg Gln Arg Arg	Asn Ser Glu Gly Asp Leu Asp Leu Trp Glu Gly Glu			
	290	295	300	
Tyr Thr Tyr Arg Cys	Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg			
305	310	315	320	
Asp Ile Val Glu Phe	Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe			
	325	330	335	
Asp Asp Met Asn Asn	Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe			
	340	345	350	
Met Ala Glu Asn Thr	Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn			
	355	360	365	
Phe Tyr Lys Thr Ile	Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu			
	370	375	380	
Lys Lys Thr Ser Arg	Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val			
385	390	395	400	
Pro Ala Lys Trp Ile	Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr			
	405	410	415	
Thr Glu Asn Arg Ala	Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly			
	420	425	430	

&lt;210&gt; 8556

&lt;211&gt; 134

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8556

Leu Pro Ala Tyr	Ser Ile His Leu Ile Asn Ile Lys Asn Met Glu Lys
1	5 10 15
Phe Ile Ala Phe	Phe Glu Ile Pro Ala Ala Asp Phe His Arg Ala Val
	20 25 30
Gly Phe Tyr Glu	Thr Val Leu Asp Ile Lys Leu Ala Val Ser Glu Tyr
	35 40 45
Glu Glu Glu Lys	Met Ala Cys Phe Met Glu Gln Gly Glu Ala Val Gly
	50 55 60
Ala Val Ser Trp	Ala Pro Asp Phe Leu Pro Ser Glu Arg Gly Thr Leu
65	70 75 80
Ile His Phe Tyr	Cys Glu Glu Ile Gly Lys Ser Leu Glu Arg Val Leu
	85 90 95
Gln Lys Gly Gly	Lys Val Ile Thr Pro Glu Thr Glu Ile Asp Ala Glu
	100 105 110
Gly Arg Gly His	Phe Ala Val Phe Ala Asp Ser Glu Gly Asn His Ile
	115 120 125
Gly Leu Tyr Ser	Asp Lys
130	

&lt;210&gt; 8557

&lt;211&gt; 256

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8557

Asn Arg Lys Tyr Ile Val Val Leu Ala Lys Arg Ile Ile Pro Cys Leu  
 1 5 10 15  
 Asp Ile Lys Asp Gly Gln Thr Val Lys Gly Thr Asn Phe Val Asn Leu  
 20 25 30  
 Arg Gln Ala Gly Asp Pro Val Glu Leu Gly Arg Ala Tyr Ser Glu Gln  
 35 40 45  
 Gly Ala Asp Glu Leu Val Phe Leu Asp Ile Thr Ala Ser His Glu Gly  
 50 55 60  
 Arg Lys Thr Phe Ala Glu Leu Val Arg Arg Ile Ala Ala Asn Ile Ser  
 65 70 75 80  
 Ile Pro Phe Thr Val Gly Gly Gly Ile Asn Glu Leu Ser Asp Val Asp  
 85 90 95  
 Arg Leu Leu Asn Ala Gly Ala Asp Lys Ile Ser Ile Asn Ser Ser Ala  
 100 105 110  
 Ile Arg His Pro Gln Leu Ile Asp Asp Ile Ala Lys His Phe Gly Ser  
 115 120 125  
 Gln Val Cys Val Leu Ala Val Asp Ala Lys Gln Thr Glu Asn Gly Trp  
 130 135 140  
 Lys Cys Tyr Leu Asn Gly Gly Arg Ile Glu Thr Asp Lys Glu Leu Thr  
 145 150 155 160  
 Ala Trp Thr Lys Glu Ala Gln Glu Arg Gly Ala Gly Glu Val Leu Phe  
 165 170 175  
 Thr Ser Met Asn His Asp Gly Val Lys Thr Gly Tyr Ala Asn Glu Ala  
 180 185 190  
 Leu Ala Glu Leu Ala Ser Gln Leu Ser Ile Pro Val Ile Ala Ser Gly  
 195 200 205  
 Gly Ala Gly Arg Met Glu His Phe Arg Asp Ala Phe Thr Leu Gly Lys  
 210 215 220  
 Ala Asp Ala Ala Leu Ala Ala Ser Val Phe His Phe Gly Glu Ile Lys  
 225 230 235 240  
 Ile Pro Glu Leu Lys Ser Tyr Leu Cys Gly Gln Gly Ile Thr Val Arg  
 245 250 255

<210> 8558

<211> 186

<212> PRT

<213> B.fragilis

<400> 8558

Leu Leu Lys Gln Met Gln Glu Lys Glu Ile Val Arg Lys Leu Lys His  
 1 5 10 15  
 Gly Asp Gln Glu Ala Phe Ala Phe Leu Tyr Asn His Tyr Trp Lys Gln  
 20 25 30  
 Val Tyr Asn Phe Thr Arg Leu Tyr Phe Thr Ala Ser Met Asp Ile Glu  
 35 40 45  
 Glu Ile Val Gln Glu Val Phe Val Lys Val Trp Glu Ser His His Phe  
 50 55 60  
 Leu Asp Glu Asn Lys Ser Phe Glu Gly Tyr Leu Phe Ile Ile Thr Arg  
 65 70 75 80  
 Asn Val Ile Phe Asn His Ser Arg Arg Tyr Tyr Lys Glu Thr Ala Leu  
 85 90 95  
 Lys Ile Thr Ala Ile Gln Ala Val Glu Glu Ser Tyr Asp Met Glu Gly  
 100 105 110  
 Glu Leu Asp Ala Ala Asp Leu Lys Tyr Ile Asp Glu Leu Val Met  
 115 120 125  
 Gln Leu Pro Pro Arg Gln Arg Glu Val Phe Arg Met Ser Arg Glu Leu  
 130 135 140  
 His Met Ser Asn Arg Glu Ile Ala Glu His Phe Ser Ile Thr Glu Lys  
 145 150 155 160

Ala Ile Glu Arg His Ile Asn Leu Ala Leu Lys Phe Leu Lys Lys Asn  
                           165                          170                          175  
 Leu Asn Leu Phe Met Leu Phe Met Ala Ala  
                           180                          185

<210> 8559  
 <211> 83  
 <212> PRT  
 <213> B.fragilis

<400> 8559  
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe  
 1                          5                          10                          15  
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met  
                           20                          25                          30  
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu  
                           35                          40                          45  
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu  
                           50                          55                          60  
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser  
 65                          70                          75                          80  
 Ser Ala Arg

<210> 8560  
 <211> 194  
 <212> PRT  
 <213> B.fragilis

<400> 8560  
 Asn Glu Phe Lys Thr Ile Thr Val Met Ile Lys Gln Thr Ala Glu Ile  
 1                          5                          10                          15  
 Phe Glu Ile Leu Ser Lys Gly Gly Phe Ile Ser Ser Asp Ser Thr Asn  
                           20                          25                          30  
 Pro Asn Ile Arg Gln Leu Tyr Thr Val Ile Glu Asp Asn Gln Ser Glu  
                           35                          40                          45  
 Leu Tyr Asp Phe Phe Ala Ala Ile Asn Phe Val Leu Glu Ser Gly Asn  
                           50                          55                          60  
 Glu Tyr Tyr Tyr Phe Ser Arg Arg Glu Asn Lys Val Asp Leu Glu Arg  
 65                          70                          75                          80  
 Lys Leu Glu Ile Ala Val Arg Trp Ile Asp Val Leu Asp Phe Ile Lys  
                           85                          90                          95  
 Thr Tyr Asp Ala Ala Phe Ser Ser Gly Phe Arg Phe Gln Pro Ala Asp  
                           100                          105                          110  
 Met Val Val Lys Val Gly Thr Asp Leu Glu Leu Lys Glu Lys Leu Thr  
                           115                          120                          125  
 Gly Leu Lys Lys Leu Thr Gly Arg Glu Lys His Glu Glu Met Ile Asp  
                           130                          135                          140  
 Lys Ile Val Asn Asp Leu Lys Arg Asp Gly Phe Ile Glu Leu Glu Asn  
 145                          150                          155                          160  
 Glu Ile Thr Ser Thr Tyr Lys Val Val Ala Ala Phe Gly Tyr Leu Glu  
                           165                          170                          175  
 Glu Leu Val Ala Cys Ile Asn Ile Pro Glu Glu Ile Gln Asn Glu Ile  
                           180                          185                          190  
 Pro Glu

<210> 8561  
 <211> 205

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8561

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Tyr Asn Tyr Lys Asn Lys Arg Ile Met Lys Gln Glu Val Leu Phe Ile
1      5      10      15
Ile Leu Asn Glu Tyr Ala Asp Trp Glu Ser Ala Phe Val Ala Ala Ser
20      25      30
Leu His Ser Gly Leu Met Pro Gly Ser Glu Ile Lys Tyr Ile Val Lys
35      40      45
Thr Val Ala Pro Thr Leu Asp Ala Val Cys Ser Leu Gly Gly Phe Arg
50      55      60
Thr Leu Pro Asp Tyr Ser Phe Asp Asn Leu Pro Ser Asp Tyr Thr Ala
65      70      75      80
Leu Val Leu Ile Gly Gly Met Gln Trp Gln Ser Ala Glu Ala Glu Arg
85      90      95
Val Phe Pro Ile Val Gln Asp Ala Phe Glu Lys Gly Lys Val Ile Gly
100     105     110
Gly Ile Cys Asn Ala Ala Ser Phe Leu Cys Ala His Gly Phe Leu Asn
115     120     125
Lys Val Lys His Thr Gly Asn Thr Leu Ala Val Leu Lys Gln Trp Gly
130     135     140
Gly Glu Arg Tyr Thr Asn Glu Asp Gly Tyr Leu Glu Lys Gln Ala Val
145     150     155     160
Gly Asp Lys Asn Ile Val Thr Ala Asn Gly Thr Gly Tyr Leu Glu Phe
165     170     175
Thr Arg Glu Leu Leu Ala Leu Lys Ala Asp Thr Gln Glu Lys Ile
180     185     190
Glu Ala Phe Tyr Asp Phe Ser Lys Asn Gly Leu Val Arg
195     200     205

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&lt;210&gt; 8562

&lt;211&gt; 1126

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8562

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Ser Met Asn Lys Phe Leu Phe Ser Cys Gln Lys Arg Cys Leu Lys Tyr
1      5      10      15
Ile Val Met Ala Leu Leu Leu Tyr Pro Leu Ser Ala Leu Ala Gln
20      25      30
Gly Gln Ile Val Val Lys Gly Gln Ser Leu Thr Ile Pro Gln Ala Ile
35      40      45
Arg Leu Ile Glu Lys Ser Ser Gln Tyr Thr Phe Phe Tyr Asn Ala Asn
50      55      60
Asp Leu Lys Asn Thr Thr Leu Lys Ser Ile Asp Cys Lys Gly Ser Ile
65      70      75      80
Asp Asp Val Leu Asn Glu Val Phe Lys Gly Ser Asn Ile Ser Tyr Val
85      90      95
Ile Lys Gly Asn Glu Val Ile Leu Lys Val Glu Lys Thr Glu Ser Thr
100     105     110
Gln Gln Lys Lys Ala Lys Ile Ile Gly Ile Val Thr Asp Ser Lys Thr
115     120     125
Gly Glu Pro Ile Ile Gly Ala Thr Val Gln Leu Leu Gly Thr Thr Thr
130     135     140
Gly Val Ile Thr Asp Val Asp Gly Lys Phe Glu Leu Ala Ala Phe Pro
145     150     155     160
Lys Asn Glu Ile Gln Ile Ser Tyr Ile Gly Tyr Val Thr Lys Lys Val
165     170     175

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Lys Val Gly Ser Gln Lys Val Met Ser Ile Thr Leu Ala Glu Asp Ala  
 180 185 190  
 Gln Gln Leu Asp Glu Val Val Val Thr Ala Phe Gly Thr Gly Gln Lys  
 195 200 205  
 Lys Glu Thr Ile Thr Gly Ser Ile Gln Ser Val Arg Pro Ser Asp Leu  
 210 215 220  
 Leu Val Pro Ser Ala Asn Leu Ser Ser Ser Phe Ala Gly Arg Leu Ser  
 225 230 235 240  
 Gly Val Ile Ala Tyr Gln Arg Ser Gly Glu Pro Gly Gln Asn Ser Ala  
 245 250 255  
 Asp Phe Phe Ile Arg Gly Val Ala Thr Met Asn Gly Ala Thr Ser Pro  
 260 265 270  
 Leu Ile Ile Leu Asp Gly Val Glu Val Ser Lys Ala Asp Leu Asn Ser  
 275 280 285  
 Leu Asp Pro Glu Val Ile Glu Ser Phe Ser Val Leu Lys Asp Ala Thr  
 290 295 300  
 Ala Ser Ala Met Tyr Gly Thr Arg Gly Ala Asn Gly Val Leu Ile Val  
 305 310 315 320  
 Lys Thr Lys Ser Gly Ser Asp Leu Asp Arg Pro Ile Ile Gly Val Arg  
 325 330 335  
 Leu Glu Gly Tyr Val Asn Thr Pro Thr Lys Lys Pro Glu Ile Val Asp  
 340 345 350  
 Gly Pro Thr Tyr Met Arg Leu Tyr Asn Glu Ala Val Thr Asn Gln Gly  
 355 360 365  
 Thr Gly Ala Val Leu Tyr Ser Asp Glu Lys Ile Asn Gly Thr Ile His  
 370 375 380  
 Asn Leu Asn Pro Tyr Ile Tyr Pro Asn Val Asp Trp Tyr Lys Glu Val  
 385 390 395 400  
 Phe Lys Asp Ala Thr Phe Asn Gln Lys Ala Asn Phe Asn Val Arg Gly  
 405 410 415  
 Gly Thr Ser Lys Ile Thr Tyr Phe Met Asn Val Asn Met Asn His Glu  
 420 425 430  
 Thr Gly Met Leu Lys Asp Arg Ser Ser Asp Phe Phe Ser Tyr Lys Asn  
 435 440 445  
 Asn Ile Asp Tyr Met Lys Tyr Ala Phe Gln Asn Asn Val Asp Phe His  
 450 455 460  
 Leu Ser Lys Ser Ser Thr Ile Ser Leu His Leu Asn Val Gln Leu Asn  
 465 470 475 480  
 Asp Met His Gly Pro Leu Thr Thr Lys Asp Gly Asn Gly Val Gly Asp  
 485 490 495  
 Ile Phe Ser Ala Ile Met Gly Thr Asn Pro Val Asp Phe Pro Val Met  
 500 505 510  
 Phe Pro Gln Gly Ser Asn Thr Trp Tyr His Trp Gly Gly Ile Leu Ala  
 515 520 525  
 Gly Asn Tyr Gln Pro Leu Asn Pro Val Ala Leu Ser Ser Ala Gly Tyr  
 530 535 540  
 Lys Asp Thr Phe Glu Ser Thr Val Val Ala Asn Val Asn Trp Asp Gln  
 545 550 555 560  
 Lys Leu Asp Phe Ile Thr Lys Gly Leu Ser Phe Arg Ala Leu Val Ser  
 565 570 575  
 Phe Lys Asn Trp Ser Tyr Asn Gln Lys Phe Arg Leu Gln Gly Tyr Asn  
 580 585 590  
 Ser Tyr Gln Leu Ser Asp Tyr Lys Gln Asn Glu Asp Gly Ser Tyr Asp  
 595 600 605  
 Phe Thr Asn Thr Pro Ile Gly Glu Pro Ser Asn His Thr Met Asp Ala  
 610 615 620  
 Phe Phe Gly Thr Asn Gly Asp Arg Arg Phe Tyr Ile Gln Gly Tyr Leu  
 625 630 635 640  
 Asn Tyr Glu Arg Ser Phe Gly Ser His Asn Val Ser Gly Met Leu Leu

645 650 655  
 Tyr Asn Gln Asp Asp Tyr Asn Thr Asn Val Asn Ser Ser Leu Ile Ala  
 660 665 670  
 Ser Leu Pro Lys Arg Lys Met Gly Val Ala Ala Arg Leu Ser Tyr Asp  
 675 680 685  
 Tyr Asp His Arg Tyr Met Leu Glu Val Asn Ala Gly Tyr Asn Gly Ser  
 690 695 700  
 Glu Ser Phe Ala Lys Gly His Arg Trp Gly Leu Phe Pro Ser Ile Ser  
 705 710 715 720  
 Leu Gly Trp Asn Ile Ser Glu Glu Lys Phe Trp Lys Pro Ile Lys Pro  
 725 730 735  
 Val Ile Ser Asn Phe Lys Val Arg Gly Ser Tyr Gly Leu Val Gly Asn  
 740 745 750  
 Asp Gln Ile Gly Ser Asp Arg Phe Ala Tyr Leu Ala Ile Val Asn Leu  
 755 760 765  
 Thr Glu Ser Pro Ser Tyr Thr Thr Gly Tyr Gly Gly Ser Thr Thr Ser  
 770 775 780  
 Leu Ser Gly Pro Thr Tyr Asn Arg Phe Gln Asn Asn Glu Leu Thr Trp  
 785 790 795 800  
 Glu Val Gly Asn Lys Leu Asn Val Gly Val Asp Leu Gln Leu Phe Asn  
 805 810 815  
 Ser Leu Asn Ile Thr Val Asp Gly Phe Arg Glu Ile Arg Asp Asn Ile  
 820 825 830  
 Phe Gln Gln Lys Asn Ser Ile Pro Asn Tyr Leu Gly Thr Ala Ser Thr  
 835 840 845  
 Lys Ile Tyr Gly Asn Phe Ala Lys Val Lys Asn Thr Gly Phe Asp Leu  
 850 855 860  
 Ala Leu Asp Tyr Gly Lys Gln Leu Asn Arg Asn Phe Ser Ile Gln Met  
 865 870 875 880  
 Lys Gly Thr Phe Thr Tyr Ala His Asn Glu Val Leu Lys Tyr Asp Glu  
 885 890 895  
 Ala Ala Gly Leu Arg Pro Ala Leu Ser Gln Val Gly Lys Ser Leu Asn  
 900 905 910  
 Ser Ile Trp Gly Tyr Val Ala Asp Gly Leu Tyr Ile Asp Glu Ala Asp  
 915 920 925  
 Ile Ala Asn Asn Pro Gln Ser Thr Ile Gly Asn Ile Ala Ile Ala Pro  
 930 935 940  
 Gly Asp Val Lys Tyr Val Asp Gln Pro Asp Ala Ser Gly Asn Tyr Asp  
 945 950 955 960  
 Gly Lys Ile Thr Ser Asp Asp Arg Val Val Leu Gly Tyr Pro Thr Ile  
 965 970 975  
 Pro Glu Ile Ile Tyr Gly Phe Gly Pro Ser Ile Thr Trp Lys Asn Trp  
 980 985 990  
 Asp Phe Ser Phe Phe Phe Gln Gly Gln Ala Arg Val Ser Phe Met Met  
 995 1000 1005  
 Ser Gly Phe Glu Pro Phe Gly Thr Gln Ser Lys Asn Asn Val Leu Lys  
 1010 1015 1020  
 Trp Ile Ser Asp Asp His Trp Ser Lys Asp Asn Gln Asn Pro Asn Ala  
 1025 1030 1035 1040  
 Arg Tyr Pro Arg Leu Thr Gln Tyr Asn Asn Asn Asn Thr Ala Ser  
 1045 1050 1055  
 Ser Ser Tyr Trp Ala Ala Asn Ala Ser Phe Leu Lys Leu Gln Asn Ala  
 1060 1065 1070  
 Glu Asn Arg Tyr Arg Phe Lys Trp Ala Arg Ile Tyr Val Asn Gly Ser  
 1075 1080 1085  
 Asn Leu Leu Thr Phe Ser Pro Phe Lys Leu Trp Asp Pro Glu Met Gly  
 1090 1095 1100  
 Gly Gly Ala Gly Met Lys Tyr Pro Thr Gln Arg Thr Tyr Asn Val Gly  
 1105 1110 1115 1120

Ile Gln Leu Thr Phe Lys  
1125

<210> 8563  
<211> 102  
<212> PRT  
<213> B.fragilis

<400> 8563  
Gln Arg Leu Lys Leu Ser Lys Asn Arg Ile Asp Gln Glu Lys Arg Val  
1 5 10 15  
Val Glu Leu Met Ile Arg Leu Tyr Cys Arg Lys Lys Glu Lys Asn Val  
20 25 30  
Thr Leu Cys Pro Arg Cys Glu Glu Leu Leu His Tyr Ala His Ala Arg  
35 40 45  
Leu Asp His Cys Pro Phe Gly Glu Lys Lys Lys Ala Cys Lys Gln Cys  
50 55 60  
Ser Ile His Cys Tyr Lys Pro Ala Met Arg Glu Gln Met Arg Arg Val  
65 70 75 80  
Met Arg Phe Ser Gly Pro Arg Met Leu Ile Tyr Ala Pro Trp Glu Ala  
85 90 95  
Ile Lys His Leu Leu Gly  
100

<210> 8564  
<211> 89  
<212> PRT  
<213> B.fragilis

<400> 8564  
His Lys Ile Asn Leu Asn Ile Ile Ile Lys Met Asn Lys Ser Asn Lys  
1 5 10 15  
Glu Thr Asn Leu Ile Lys Lys Leu Leu Ala Asp Gln Leu Asp Lys Lys  
20 25 30  
Glu Arg Lys Lys Leu Tyr Tyr Ser Asn Leu Ile Glu Lys Gln Met Arg  
35 40 45  
Lys Gln Trp Lys Glu Asn Lys Asn Thr Pro Val Glu Asn Glu Ile Gly  
50 55 60  
Asn Lys Ile Trp Asp Lys Ile Glu Asn Gln Cys Ile Lys Val His Lys  
65 70 75 80  
Arg Ile Val Pro Leu Glu Leu Ile Gln  
85

<210> 8565  
<211> 96  
<212> PRT  
<213> B.fragilis

<400> 8565  
Pro Ile Lys Asn Arg Lys Arg Met Glu Gln Lys Phe Cys Gln Ser Cys  
1 5 10 15  
Gly Met Pro Leu Asn Pro Glu Val Leu Gly Thr Glu Lys Asp Gly Ser  
20 25 30  
Lys Asn Glu Glu Tyr Cys Thr Tyr Cys Tyr Ala Asp Gly His Phe Thr  
35 40 45  
Val Glu Cys Thr Met Asp Glu Met Ile Asn Gln Cys Ala Gln Phe Val  
50 55 60  
Asp Glu Phe Asn Lys Gly Ser Glu Val Lys Met Thr Lys Glu Glu Ala  
65 70 75 80

Ile Ala Asn Met Lys Gln Phe Phe Pro Met Leu Lys Arg Trp Lys Gln  
 85 90 95

<210> 8566  
 <211> 287  
 <212> PRT  
 <213> B.fragilis

<400> 8566

Lys Ser Met Lys Ser Ser Arg Asn Thr Ser Thr Ser Gly Lys Pro Ala  
 1 5 10 15  
 Ser Gly Arg Arg Thr Pro Ala Arg Lys Thr Lys Ala Lys Lys Lys Thr  
 20 25 30  
 Thr Arg Thr Met Pro Val Trp Met Arg Asn Thr Leu Ala Leu Ile Val  
 35 40 45  
 Val Gly Val Phe Ser Leu Thr Phe Tyr Tyr Phe Val Ile Arg Pro Tyr  
 50 55 60  
 Ser Tyr Arg Trp Lys Glu Cys Tyr Gly Arg Lys Glu Tyr Gly Val Cys  
 65 70 75 80  
 Ile Pro Cys Gly Tyr Glu Val His Gly Ile Asp Ile Ser His Tyr Gln  
 85 90 95  
 Gly Asn Ile Asp Trp Lys Glu Leu Lys Gln Asn Arg Glu Thr Asp Phe  
 100 105 110  
 Pro Leu His Phe Ile Phe Met Lys Ala Thr Glu Gly Gly Asp His Gly  
 115 120 125  
 Asp Asp Thr Phe Lys Asp Asn Phe Glu Gln Ala Arg Arg Tyr Gly Phe  
 130 135 140  
 Ile Arg Gly Ala Tyr His Phe Phe Thr Pro Arg Thr Asp Ala Leu Lys  
 145 150 155 160  
 Gln Ala Asp Phe Phe Ile Arg Thr Val Lys Leu Asp Ser Gly Asp Leu  
 165 170 175  
 Pro Pro Val Leu Asp Val Glu Leu Thr Gly Lys Arg Pro Lys Lys Glu  
 180 185 190  
 Leu Gln Gln Asn Ile Lys Lys Trp Leu Asp Arg Val Glu Ala His Tyr  
 195 200 205  
 Gly Val Lys Pro Ile Leu Tyr Thr Ser Tyr Lys Phe Lys Thr Arg Tyr  
 210 215 220  
 Leu Asp Asp Ser Leu Phe Asn Ala Tyr Pro Tyr Trp Ile Ala His Tyr  
 225 230 235 240  
 Tyr Val Asp Ser Val Arg Tyr Glu Gly Lys Trp His Phe Trp Gln His  
 245 250 255  
 Thr Asp Ile Gly Ser Val Pro Gly Ile His His Asp Val Asp Leu Asn  
 260 265 270  
 Val Phe Asn Gly Ser Leu Glu Glu Leu Arg Lys Met Thr Met Arg  
 275 280 285

<210> 8567  
 <211> 137  
 <212> PRT  
 <213> B.fragilis

<400> 8567

Tyr Thr Met Lys Ser Leu Asn Glu Arg Ala Ala Asp Leu Leu Gln Gly  
 1 5 10 15  
 Cys Glu Thr Val Ile Leu Ser Ser Val Asn Gln Glu Gly Tyr Pro Arg  
 20 25 30  
 Pro Val Pro Leu Ser Lys Ile Ala Ser Glu Gly Ile Ser Glu Ile Trp  
 35 40 45  
 Met Ala Thr Gly Glu His Ser Val Lys Thr Lys Asp Phe Arg Ser Asn



50 55 60  
 Pro Lys Ala Gly Leu Cys Phe Tyr Glu Gln Gly Asn Ser Val Ala Leu  
 65 70 75 80  
 Thr Gly Glu Ile Glu Val Val Thr Asp Ala Gly Leu Lys Gln Lys Tyr  
 85 90 95  
 Trp Gln Asp Trp Phe Ile Ala His Phe Pro Lys Gly Pro Thr Asp Pro  
 100 105 110  
 Glu Tyr Val Leu Leu Lys Phe Arg Ser Glu His Ala Thr Phe Trp Ile  
 115 120 125  
 Asp Gly Gln Phe Val His Arg Asn Ile  
 130 135

<210> 8568  
 <211> 302  
 <212> PRT  
 <213> B.fragilis

<400> 8568  
 Arg Glu Met Lys Met Lys Lys Ile Leu Leu Gly Leu Cys Val Ile Leu  
 1 5 10 15  
 Gly Leu Ile Asn Met Ile Gly Cys Ser Ser Asp Glu Lys Tyr Pro Met  
 20 25 30  
 Pro Thr Ser Ile Asp Gln Asn Ser Leu Ser Ala Glu Ala Lys Ala Gly  
 35 40 45  
 Ala Ile Lys Leu Lys Trp Thr Val Pro Ala Asp Ser Asn Tyr Tyr Tyr  
 50 55 60  
 Val Lys Val Thr Tyr Thr Leu Pro Glu Asp Gly Lys Lys Cys Met Arg  
 65 70 75 80  
 Leu Ala Ser Val Asn Ser Asp Thr Met Leu Val Asp Asn Leu Leu His  
 85 90 95  
 Arg Tyr Gly Asp Ile Asn Phe Thr Leu Gln Pro Cys Asn Arg Ala Gly  
 100 105 110  
 Glu Ala Ser Gln Ser Cys Ser Ile Met Ala Gln Ala Leu Pro Ala Leu  
 115 120 125  
 Lys Gln Ile Lys Thr Asp Arg Asn Pro Ile Thr Leu Ser Ala Lys Gln  
 130 135 140  
 Leu Tyr Thr Asp Asp Gln Glu Ser Ser Glu Gly Pro Ile Ala Asn Leu  
 145 150 155 160  
 Val Asp Gly Arg Asn Asp Thr Tyr Phe His Met Ser Trp Ser Ser Pro  
 165 170 175  
 Thr Pro Phe Pro His Tyr Ile Val Val Asp Leu Gly Glu Glu Asn Ala  
 180 185 190  
 Leu Ser Thr Phe Leu Phe Ser Tyr Val Cys Arg Asp Asn Asn Asn Lys  
 195 200 205  
 Asp Asn Pro Lys Glu Met Asp Ile Leu Gly Ser Asn Thr Phe Asp Gly  
 210 215 220  
 Lys Asn Tyr Asp Glu Ser Gln Thr Thr Leu Leu Ala Ser Leu Ser Asn  
 225 230 235 240  
 Leu Pro Asn Thr Lys Ala Ala Ser Tyr Glu Ser Asp Ile Ile Lys Ala  
 245 250 255  
 Gly Ala Ser Tyr Arg Tyr Leu Trp Phe Lys Val Lys Ser Ser Thr Ser  
 260 265 270  
 Gly Ser Asn Trp Ile Ala Leu Ala Glu Leu Gly Leu Ser Lys Val Ile  
 275 280 285  
 Val Lys Thr Tyr Asp Pro Glu Thr Gly Glu Thr Thr Ile Glu  
 290 295 300

<210> 8569  
 <211> 360

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8569

Lys Glu Ser Asp Ser Tyr Met Met Thr Leu Asn Asp Phe Glu Asn Tyr  
 1 5 10 15  
 Val Pro Cys Lys Ile Trp Ala Arg Gly Glu Glu Tyr Tyr Glu Cys Asp  
 20 25 30  
 Ala Val Lys Asp Leu Glu Glu Thr Glu Pro Gly Glu Trp Ile Ala Thr  
 35 40 45  
 Val Glu Gly Thr Glu Asp Tyr Glu Val Glu Ile Ser Leu Glu Gly Lys  
 50 55 60  
 Lys Ile Ile His Trp Ser Cys Asp Cys Pro Tyr Glu Gly Asp Ile Cys  
 65 70 75 80  
 Lys His Val Val Ala Thr Val Leu Ala Ile Arg Asn Asn Arg Ser Gly  
 85 90 95  
 Gln Lys Arg Phe Leu Ser Ala Arg Glu Ala Lys Leu Met Glu Lys Gln  
 100 105 110  
 Gln Ala Thr Leu Lys Asp Lys Lys Val Glu Asp Ile Leu Ala Phe Val  
 115 120 125  
 Pro Ser Asp Gln Leu Ser Asp Phe Val Leu Glu Tyr Ala Ser Lys His  
 130 135 140  
 Thr Glu Cys Lys Gln Ala Leu Leu Glu Lys Phe Leu Pro Lys Pro Gln  
 145 150 155 160  
 Ala Asn Gly Lys Ser Pro Lys Asn Tyr Gly Asn Asp Ile Arg Lys Cys  
 165 170 175  
 Phe Asn Asp Ser Tyr Val Glu Thr Lys Gly Arg Tyr Gly Tyr Tyr  
 180 185 190  
 Glu Pro Thr Met Asp Trp Asn Lys Val Gly Cys Glu Leu Asn Lys Tyr  
 195 200 205  
 Leu Lys Lys Ala Lys Leu Leu Val Glu Gln His Cys Phe Glu Asp Ala  
 210 215 220  
 Ala Ala Ile Ala Thr Gly Ile Leu Arg Ala Ile Gly Glu Asn Tyr Ile  
 225 230 235 240  
 Glu Glu Asp Leu Val Tyr His Asn Glu Phe Glu Ala Asn Phe Tyr Cys  
 245 250 255  
 Glu Cys Ser Gly Glu Leu Leu Leu Glu Ile Ile Tyr Arg Pro Glu Ile  
 260 265 270  
 Thr Gly Ser Gln Lys Ile Met Ile Leu Asn Glu Val Arg Gln Ile Glu  
 275 280 285  
 Lys Leu Asp Thr Tyr Arg Glu Tyr Asp Val Tyr Asp Ile Asp Leu Leu  
 290 295 300  
 Leu Ser Gln Ile Thr Ile Ala Thr Gln Thr Gln Glu Glu Ala Leu Thr  
 305 310 315 320  
 Tyr Ile Asn Gln Leu Ile Glu Glu Arg Lys Ser Ser Trp Glu Leu Tyr  
 325 330 335  
 Lys Leu Ile Glu Lys Lys Ile Asn Ile Ser Leu Ile Pro Gln His Tyr  
 340 345 350  
 Asn Leu Thr Leu Phe Ile Ser Ser  
 355 360

&lt;210&gt; 8570

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8570

Lys Met Glu Glu Tyr Glu Val Ile His Arg Pro Glu Arg Asn Arg Phe  
 1 5 10 15

Glu Leu Glu Lys Asn Gly Met Thr Ala Phe Val Glu Tyr Glu Val Glu  
                   20                  25                  30  
 Asp Gly Ala Leu Asp Ile Met His Thr Ile Val Pro Pro Pro Leu Glu  
                   35                  40                  45  
 Gly Lys Gly Ile Ala Ala Ala Leu Val Glu Ala Thr Tyr Lys Tyr Ala  
                   50                  55                  60  
 Ser Ala Gln Gly Leu Lys Pro Lys Ala Thr Cys Ser Tyr Ala Val Ala  
                   65                  70                  75                  80  
 Trp Leu Lys Arg His Pro Ala Glu  
                                   85

<210> 8571  
 <211> 73  
 <212> PRT  
 <213> B.fragilis

<400> 8571  
 Lys Val Arg Glu Asn Thr Pro Thr Thr Ile Ser Ala Arg Val Leu Arg  
 1                  5                  10                  15  
 Ile Gln Thr Gly Met Val Arg Val Val Phe Phe Phe Ala Phe Val Phe  
                   20                  25                  30  
 Arg Ala Gly Val Arg Arg Pro Glu Ala Gly Leu Pro Glu Val Glu Val  
                   35                  40                  45  
 Phe Arg Glu Asp Phe Ile Asp Phe Tyr Ser Tyr Leu Glu Phe Asp Ser  
                   50                  55                  60  
 Pro Gln Ile Thr Arg Ile Phe Thr Asp  
 65                  70

<210> 8572  
 <211> 234  
 <212> PRT  
 <213> B.fragilis

<400> 8572  
 Arg Leu Met Asp Glu Thr Leu Ile His Tyr Thr Asp Val Glu Ile His  
 1                  5                  10                  15  
 Gln Gln Glu Leu Cys Val Leu Ser Glu Val Asn Leu Gln Leu His Lys  
                   20                  25                  30  
 Gly Glu Phe Val Tyr Leu Val Gly Lys Val Gly Ser Gly Lys Thr Ser  
                   35                  40                  45  
 Leu Leu Lys Thr Leu Tyr Gly Glu Leu Asp Val Thr Ala Gly Glu Ala  
                   50                  55                  60  
 Glu Val Leu Gly Tyr Arg Met Thr Ser Ile Lys Arg Lys His Ile Pro  
 65                  70                  75                  80  
 Gln Leu Arg Arg Lys Leu Gly Ile Val Phe Gln Asp Phe Gln Leu Leu  
                   85                  90                  95  
 Thr Asp Arg Thr Val Asn Asp Asn Leu Glu Phe Val Leu Arg Ala Thr  
                   100                  105                  110  
 Gly Trp Lys Asn Lys Gln Glu Ile Lys Glu Arg Ile Ala Glu Val Leu  
                   115                  120                  125  
 Asn Leu Val Gly Met Glu Asn Lys Gly Tyr Lys Leu Pro Asn Glu Leu  
                   130                  135                  140  
 Ser Gly Gly Glu Gln Gln Arg Ile Val Ile Ala Arg Ala Met Leu Asn  
 145                  150                  155                  160  
 Ser Pro Glu Ile Ile Leu Ala Asp Glu Pro Thr Gly Asn Leu Asp Val  
                   165                  170                  175  
 Glu Thr Gly Lys Ala Ile Val Glu Leu His Asn Ile Cys Gln Thr  
                   180                  185                  190  
 Gly Ser Leu Val Val Met Thr Thr His Asn Leu Gln Leu Val Ala Glu

195                      200                      205  
 Tyr Pro Gly Gln Val Tyr Arg Cys Ala Glu His Arg Ile Val Asn Val  
      210                      215                      220  
 Thr Asp Glu Phe Val Lys Lys Glu Asn Asn  
 225                      230

<210> 8573  
 <211> 69  
 <212> PRT  
 <213> B.fragilis

<400> 8573  
 Arg Ile Ala Glu Glu Leu Met Glu Ile Leu Ser Ala Pro Ala Leu Ser  
 1                      5                      10                      15  
 Arg Arg Ser Thr Ser Leu Asn Ser Leu Ile Pro Pro Pro Thr Val Asn  
                     20                      25                      30  
 Gly Ile Leu Ile Leu Ala Ala Ile Arg Arg Thr Ser Ser Ala Lys Val  
                     35                      40                      45  
 Leu Arg Pro Ser Trp Leu Ala Val Met Ser Arg Lys Thr Asn Ser Ser  
                     50                      55                      60  
 Ala Pro Cys Ser Leu  
 65

<210> 8574  
 <211> 128  
 <212> PRT  
 <213> B.fragilis

<400> 8574  
 Leu Phe Thr Cys Thr Phe Ser Phe Arg Phe Gly Thr Ile Leu Ala Ile  
 1                      5                      10                      15  
 Cys Leu Ser Gln Lys Lys Ser Cys Val Met Glu Glu Tyr Leu Ser Ala  
                     20                      25                      30  
 Asp Ile Tyr Val Ser Lys Arg Asn Asn Ser Leu Ile Asn Gly Lys Met  
                     35                      40                      45  
 Ile Gly Arg Val Leu Gly Ile Leu Leu Phe Ile Glu Ala Gly Met Phe  
                     50                      55                      60  
 Val Leu Cys Ser Gly Ile Ser Val Val Tyr Gly Glu Ser Asp Tyr Lys  
 65                      70                      75                      80  
 Tyr Phe Leu Tyr Thr Ala Gly Ile Asn Leu Leu Ser Gly Ala Leu Leu  
                     85                      90                      95  
 Val Phe Tyr Gly Arg Gly Ala Glu Asn Arg Leu Ser Arg Arg Asp Gly  
                     100                      105                      110  
 Tyr Cys Ile Glu Thr Leu Ser Trp Val Phe Phe Thr Leu Phe Gly Met  
                     115                      120                      125

<210> 8575  
 <211> 257  
 <212> PRT  
 <213> B.fragilis

<400> 8575  
 Lys Trp Thr Cys Glu Ile Ala Thr Tyr Ser Ser Ser Ile Arg Asp Asn  
 1                      5                      10                      15  
 Met Lys Lys Gly Phe Thr Ile Leu Leu Phe Leu Phe Ser Leu Ala Glu  
                     20                      25                      30  
 Val Tyr Ala Gln Thr Glu Phe Thr Thr Cys Leu Phe Asp Ser Ser Arg  
                     35                      40                      45  
 Asn Arg Ile Val Pro Val Ala Ile Tyr Gln Pro Arg Lys Glu Thr Pro

50 55 60  
 Lys Thr Arg Val Ile Ile Phe Asn His Gly Tyr Asp Gly Asn Lys Asn  
 65 70 75 80  
 Asp Lys Ser Asn Arg Ser Tyr Ser Tyr Leu Thr Arg Phe Leu Ala Glu  
 85 90 95  
 Lys Gly Tyr Tyr Val Ile Ser Ile Gln His Glu Leu Ser Asp Asp Pro  
 100 105 110  
 Leu Leu Ala Met Glu Gly Asn Phe Met Glu Thr Arg Met Pro Asn Trp  
 115 120 125  
 Lys Arg Gly Glu Glu Asn Ile Leu Phe Thr Ile Arg Glu Phe Lys Lys  
 130 135 140  
 Leu Lys Pro Asn Leu Gln Trp Glu Lys Leu Cys Val Ile Gly His Ser  
 145 150 155 160  
 Asn Gly Gly Asp Ile Thr Met Leu Thr Ala Thr Asp His Pro Glu Leu  
 165 170 175  
 Ile Met Lys Ala Ile Ser Met Asp His Arg Arg Met Ile Ile Pro Arg  
 180 185 190  
 Thr Gln Lys Pro Arg Ile Tyr Thr Leu Arg Gly Cys Asp Tyr Asp Ala  
 195 200 205  
 Asp Pro Asp Val Val Pro Thr Ser Glu Glu Gln Lys Lys Phe Arg Ile  
 210 215 220  
 Glu Val Val Arg Leu Asp Gly Val Thr His Ser Asn Met Gly Glu Asn  
 225 230 235 240  
 Gly Ser Ala Glu Gln His Asp Leu Ile Asn Arg His Ile Tyr Ile Leu  
 245 250 255  
 Lys

<210> 8576  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 8576  
 Ser Ile Pro Arg Ile Gly Trp Ala Thr Arg Ser Gln Ser Arg Ser His  
 1 5 10 15  
 Ile Thr Asp Thr Gly Asp His Arg Thr Asp Gly Leu Gly Lys Ala Asp  
 20 25 30  
 Thr Gln Glu Gln Glu Asn Cys Pro Thr Lys Asn Asp Asp Lys Ile  
 35 40 45  
 Lys Ser Lys Lys His Thr His Ser Arg His Asn Arg Arg  
 50 55 60

<210> 8577  
 <211> 65  
 <212> PRT  
 <213> B.fragilis

<400> 8577  
 Val Lys Leu Arg Ala Leu Ile Leu Arg Tyr Lys Glu Ser Val Leu Ile  
 1 5 10 15  
 Arg Val Ile Arg Gly Glu Pro Lys Asn Gly Ser Phe Ser Glu Gln Ala  
 20 25 30  
 Ser Ile Arg Thr Val Tyr Ser Ala Gly Cys Arg Phe Ser His Ala Thr  
 35 40 45  
 Ala Tyr Glu His Val Ala Leu Gly Phe Asn Pro Cys Ala Glu Ala Tyr  
 50 55 60

Leu  
 65

<210> 8578  
 <211> 274  
 <212> PRT  
 <213> B.fragilis

<400> 8578

Ser Met Tyr Arg Glu Tyr Gln Pro Cys Gly Leu Leu Ala Pro Tyr Val  
 1 5 10 15  
 Asp Lys Ile Trp Glu Phe Lys Gly Ser Pro Glu Tyr Gly Met Arg Ile  
 20 25 30  
 Asn Val Leu Pro Asp Gly Cys Thr Asp Leu Ile Phe Ala Leu Gly Gly  
 35 40 45  
 Ile Thr Gln Pro Val Gly Asn Glu Gly Arg Ile Met Pro Ser Cys Arg  
 50 55 60  
 Ser Phe Phe Val Gly Pro Met Lys Arg Tyr Ser Glu Leu Val Ala Tyr  
 65 70 75 80  
 Thr Glu Thr Val His Met Val Gly Ile Arg Phe His Pro Cys Gly Leu  
 85 90 95  
 Phe Arg Phe Met Asp Leu Pro Val Gln Glu Leu Gly Gly Gln Arg Ile  
 100 105 110  
 Ser Ser Ala Asp Leu Gly Ile Lys Leu Phe Asp Asp Ser Phe Thr Glu  
 115 120 125  
 Arg Leu Tyr Glu Leu Pro Asp Leu Arg Ser Arg Ile Gln Cys Ile Glu  
 130 135 140  
 Thr Val Leu Val Arg Ser Met His Lys His Asp Val Val Asp Lys Gln  
 145 150 155 160  
 Ile Val Phe Ala Val Asn His Ile His Leu Tyr His Gly Gln Arg Glu  
 165 170 175  
 Ile Arg Leu Leu Ala Glu Asp Thr Cys Leu Cys Gln Arg His Leu Glu  
 180 185 190  
 Arg Arg Phe Lys Leu Phe Thr Gly Phe Thr Pro Lys Glu Tyr Ser Arg  
 195 200 205  
 Ile Val Lys Phe Arg Gln Ala Ile Asp Leu Leu Lys Asn Thr Thr Glu  
 210 215 220  
 Ala Asn Asn Leu Leu Ser Val Ala Val Asn Ala Gly Tyr Tyr Asp Val  
 225 230 235 240  
 Ser His Phe Leu Lys Glu Val Lys Thr Leu Ser Gly Gly Thr Ala Glu  
 245 250 255  
 Ser Phe Leu Ser Pro Thr Leu Pro Gln Glu Gly Leu Leu Thr Tyr Ile  
 260 265 270  
 Glu Lys

<210> 8579  
 <211> 244  
 <212> PRT  
 <213> B.fragilis

<400> 8579

Ile Glu Asn Arg Gln Met Ile Glu Leu Ile Pro Ala Ile Asp Ile Ile  
 1 5 10 15  
 Asp Gly Lys Cys Val Arg Leu Ser Gln Gly Asp Tyr Gly Ser Lys Lys  
 20 25 30  
 Val Tyr Asn Glu Asn Pro Val Glu Val Ala Lys Glu Phe Glu Ala Asn  
 35 40 45  
 Gly Ile Arg Arg Leu His Val Val Asp Leu Asp Gly Ala Ala Ser His  
 50 55 60  
 His Val Val Asn Tyr Arg Thr Leu Asp Leu Ile Ala Ser Arg Thr Ser

65		70		75		80									
Leu	Ile	Ile	Asp	Phe	Gly	Gly	Gly	Leu	Lys	Ser	Asp	Glu	Asp	Leu	Ile
		85						90						95	
Ile	Ala	Phe	Glu	Asn	Gly	Ala	Gln	Met	Val	Thr	Gly	Gly	Ser	Ile	Ala
		100						105					110		
Val	Arg	Asn	Pro	Asp	Leu	Phe	Cys	Arg	Trp	Ile	Asp	Arg	Tyr	Gly	Ser
		115					120					125			
Gly	Lys	Ile	Ile	Leu	Gly	Ala	Asp	Val	Lys	Asp	Arg	Arg	Ile	Ala	Val
		130				135					140				
Asn	Gly	Trp	Lys	Asp	Glu	Ser	Thr	Cys	Glu	Leu	Phe	Pro	Phe	Leu	Lys
		145			150				155						160
Asp	Tyr	Thr	Gln	Lys	Gly	Ile	Glu	Lys	Val	Ile	Cys	Thr	Asp	Ile	Ser
			165						170					175	
Cys	Asp	Gly	Met	Leu	Ala	Gly	Pro	Ser	Leu	Asp	Leu	Tyr	Lys	Glu	Ile
		180						185					190		
Leu	Ala	Glu	His	Pro	Thr	Leu	Tyr	Leu	Ile	Ala	Ser	Gly	Gly	Val	Ser
		195					200					205			
Ser	Ile	Ala	Asp	Ile	Glu	Ala	Leu	His	Glu	Ala	Gly	Val	Pro	Ala	Val
		210				215					220				
Ile	Phe	Gly	Lys	Ala	Leu	Tyr	Glu	Gly	Arg	Ile	Thr	Leu	Lys	Glu	Leu
		225			230				235					240	
Gln	Ala	Phe	Leu												

&lt;210&gt; 8580

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8580

Thr	Leu	Pro	Arg	Gly	Leu	Arg	Thr	Ala	Leu	Pro	Val	Gly	Lys	Ser	Asp
1				5					10					15	
Glu	Arg	Leu	Leu	Leu	Gly	Gly	Val	Ile	Ser	Asn	Cys	Phe	Asp	Ser	Ser
			20				25						30		
Asp	Arg	Leu	His	Ile	Leu	His	Ile	Ile	Asp	Leu	Ser	Lys	Asp	Lys	Arg
		35				40						45			
Phe	Tyr	Arg	Asn	Asn	Asp	Leu	Leu	Leu	Val	Thr	Ile				
	50					55					60				

&lt;210&gt; 8581

&lt;211&gt; 639

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8581

Tyr	Ile	Leu	Met	Lys	Ile	Ile	Tyr	Lys	Leu	Leu	Phe	Leu	Phe	Leu	Leu
1				5					10					15	
Thr	Ile	Gly	Tyr	Ser	Ser	Cys	Asp	Phe	Leu	Asp	Ile	Val	Pro	Asp	Glu
		20					25					30			
Ile	Thr	Thr	Glu	Ala	Asp	Ala	Phe	Lys	Asp	Arg	Asn	Ala	Ala	Lys	Asn
		35				40						45			
Phe	Val	Tyr	Ser	Cys	Tyr	Gly	Tyr	Leu	Pro	Gln	Ser	Asn	Val	Ala	Ser
	50					55					60				
Gly	Ser	Leu	Asp	Leu	Leu	Thr	Gly	Asp	Glu	Val	Ile	Thr	Ala	Phe	Glu
	65				70					75				80	
His	Glu	Thr	Phe	Ala	Ser	Phe	Pro	Lys	Gly	Asn	Tyr	Thr	Ala	Ser	Ser
			85					90					95		
Pro	Val	Ile	Ser	Tyr	Trp	Asn	Thr	Phe	Phe	Gln	Gly	Leu	Arg	Gln	Cys
		100						105						110	

Tyr Ile Phe Leu Glu Asn Val Asp Lys Val Pro Asp Leu Thr Glu Ser  
 115 120 125  
 Val Lys Thr Asp Tyr Ile Ala Gln Val Lys Phe Leu Ile Ala Tyr Tyr  
 130 135 140  
 His Tyr Gln Leu Ala Arg Cys Tyr Gly Pro Ile Ile Leu Ile Lys Glu  
 145 150 155 160  
 Leu Pro Asp Val Asn Ala Ser Gln Ala Glu Tyr Leu Pro Arg Thr Ser  
 165 170 175  
 Tyr Asp Glu Cys Val Asp Trp Ile Cys Asn Leu Leu Asp Glu Ala Ala  
 180 185 190  
 Ser Ser Leu Pro Ala Ile Arg Thr Asn Lys Glu Asp Tyr Gly Leu Ala  
 195 200 205  
 Thr Ser Val Gly Ala Lys Ala Val Lys Ala Lys Met Leu Leu Tyr Ala  
 210 215 220  
 Ala Ser Pro Leu Phe Asn Gly Asn Ser Ser Phe Tyr Ser Asn Phe Thr  
 225 230 235 240  
 Asp Lys Ser Gly Ser Gln Leu Met Pro Leu Thr Tyr Asp Pro Asn Lys  
 245 250 255  
 Trp Val Lys Ala Lys Thr Ala Ile Lys Glu Ala Ile Asp Leu Ala Glu  
 260 265 270  
 Gln Asn Gly His Ala Leu Tyr Val Lys Gln Asp Tyr Lys Ile Gly Asn  
 275 280 285  
 Glu Asp Ala Asn Pro Tyr Pro Ala Ala Gly Pro Val Arg Cys Leu Arg  
 290 295 300  
 Thr Ser Leu Val Asp Trp Asp Ser Arg Asn Pro Glu Val Leu Leu Ala  
 305 310 315 320  
 Glu Thr Arg Ser Glu Gly Ser Tyr Gly Ile Gln Asn Lys Ser Leu Pro  
 325 330 335  
 Phe Val Thr Asp Gly Trp Ala Trp Asn Gly Val Gly Pro Thr Trp Thr  
 340 345 350  
 Met Leu Asn Arg Phe Tyr Thr Lys Asn Gly Leu Pro Trp Asp Glu Asp  
 355 360 365  
 Pro Glu Tyr Lys Asp Lys Asp Lys Leu Lys Ile Val Asn Val Asp Ala  
 370 375 380  
 Ser His Ala Asp Glu Ala His Glu Gly Ser Lys Thr Leu Leu Phe Asn  
 385 390 395 400  
 Leu Asp Arg Glu Pro Arg Phe Tyr Ala Trp Val Ala Phe Gln Gly Gly  
 405 410 415  
 Tyr Tyr Glu Val Met Asn Gly Ser Thr Asn Pro Ala Tyr Val Met Ser  
 420 425 430  
 Asn Gly Lys Lys Asp Asn Ser Asp Ser Arg Leu Ile Cys Asp Phe Val  
 435 440 445  
 Leu Gly Gly Asn Cys Ser Arg Gly Thr Ala Thr Val Gln Arg Pro Gly  
 450 455 460  
 Asn Tyr Thr Pro Ser Gly Tyr Leu Asn Lys Lys Gly Val Asp Pro Asn  
 465 470 475 480  
 Thr Val Val Ser Thr Asn Ala Thr Lys Leu Asn Gln Tyr Pro Trp Pro  
 485 490 495  
 Ile Ile Arg Leu Ala Asp Leu Tyr Leu Ala Tyr Ala Glu Ala Cys Val  
 500 505 510  
 Glu Thr Asn Asp Leu Glu Thr Ala Lys Gln Tyr Leu Asn Lys Val Arg  
 515 520 525  
 Glu Arg Ala Gly Ile Pro Thr Val Glu Thr Ala Trp Ser Gly Val Ala  
 530 535 540  
 Ala Leu Asp Gln Thr Lys Leu Arg Gln Ile Val Arg Gln Glu Arg Met  
 545 550 555 560  
 Asn Glu Leu Tyr Leu Glu Asn Gln Asn Phe Trp Asp Met Arg Arg Trp  
 565 570 575  
 Leu Leu Ala Gly Gln Tyr Phe Asn Val Lys Ala Lys Gly Leu Asn Ile



	580		585		590										
Ala	Ala	Thr	Thr	Ile	Glu	Asp	Tyr	Ala	Ile	Val	Lys	Thr	Ile	Asp	Phe
	595						600					605			
Glu	Arg	Lys	Phe	Glu	Ala	Pro	Thr	Gln	Tyr	Leu	Leu	Pro	Ile	Pro	Ser
	610					615					620				
Ala	Asp	Ile	Asn	Arg	Asn	Glu	Lys	Leu	Val	Asn	Asn	Pro	Gly	Tyr	
625					630					635					

&lt;210&gt; 8582

&lt;211&gt; 395

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8582

Ser	Asn	Asn	Ile	Thr	Met	Thr	Lys	Arg	Ile	Gly	Asn	Ser	Arg	Leu	Tyr
1			5					10						15	
Ile	Leu	Ile	Phe	Ile	Gly	Ile	Val	Ser	Ala	Phe	Gly	Pro	Phe	Val	Thr
			20				25					30			
Asp	Phe	Tyr	Leu	Pro	Ala	Leu	Pro	Val	Leu	Ser	Glu	Tyr	Phe	Asp	Thr
	35					40					45				
Thr	Ala	Ser	Leu	Val	Gln	Leu	Ser	Leu	Thr	Phe	Ser	Met	Val	Gly	Leu
	50				55						60				
Ala	Val	Gly	Gln	Leu	Ile	Gly	Pro	Leu	Ser	Asp	Lys	Tyr	Gly	Arg	
65				70					75					80	
Lys	Leu	Pro	Leu	Met	Val	Ser	Leu	Val	Ile	Phe	Cys	Ile	Ser	Thr	Val
			85					90						95	
Gly	Cys	Leu	Tyr	Ser	Pro	Glu	Ile	His	Gly	Phe	Ile	Phe	Ala	Arg	Leu
			100				105						110		
Leu	Gln	Gly	Leu	Ser	Gly	Ala	Gly	Gly	Val	Val	Ile	Ser	Lys	Ser	Ile
	115					120						125			
Ala	Ile	Asp	Leu	Tyr	Gln	Gly	Lys	Glu	Leu	Thr	Arg	Phe	Phe	Ala	Met
	130				135						140				
Leu	Ser	Ser	Val	Gln	Gly	Leu	Ala	Pro	Val	Cys	Ala	Pro	Val	Leu	Gly
145				150					155					160	
Gly	Ile	Leu	Leu	Gly	Ala	Met	Asp	Trp	Lys	Gly	Ile	Phe	Trp	Ile	Leu
			165					170						175	
Leu	Ala	Ile	Gly	Ile	Leu	Leu	Ile	Val	Ala	Leu	Ser	Ala	Phe	Lys	Glu
	180						185						190		
Ser	Leu	Glu	Ile	Lys	Lys	Arg	Gln	Lys	Gly	Asn	Val	Phe	Ser	Thr	Phe
	195					200						205			
Lys	Tyr	Tyr	Leu	Pro	Val	Leu	Arg	Asn	Arg	Gln	Phe	Met	Arg	Tyr	Val
	210				215						220				
Leu	Ile	Gln	Ala	Phe	Ala	Met	Gly	Val	Met	Phe	Thr	Tyr	Ile	Ala	Ala
225			230						235					240	
Ser	Pro	Phe	Ile	Phe	Gln	Asn	His	Phe	Gly	Thr	Ser	Pro	Phe	Ala	Tyr
			245					250					255		
Ser	Leu	Cys	Phe	Gly	Val	Asn	Ala	Leu	Gly	Ile	Met	Leu	Gly	Ser	Leu
	260					265						270			
Ala	Val	Ser	Arg	Phe	Lys	Asp	Ala	Thr	Ala	Ala	Leu	Arg	Phe	Gly	Val
	275					280						285			
Ala	Gly	Phe	Thr	Thr	Met	Ser	Leu	Pro	Val	Ala	Ala	Ala	Leu	Ile	Phe
	290				295					300					
Ser	Pro	Ser	Val	Trp	Ile	Val	Glu	Gly	Thr	Leu	Phe	Phe	Leu	Leu	Ala
305			310						315					320	
Phe	Leu	Gly	Leu	Ile	Leu	Pro	Gly	Ser	Thr	Leu	Ala	Leu	Asp	Met	
			325					330					335		
Glu	Arg	Lys	Asn	Ser	Gly	Asn	Ala	Ser	Ala	Leu	Leu	Gly	Phe	Leu	Met
	340						345					350			
Phe	Val	Phe	Gly	Gly	Leu	Leu	Ser	Pro	Leu	Thr	Gly	Ile	Gly	Asn	Met

355 360 365  
 Leu Tyr Ser Thr Gly Ile Ile Ile Val Ala Cys Cys Val Gly Thr Trp  
 370 375 380  
 Phe Phe Thr Tyr Lys Ala Thr Ser Ser Ala Arg  
 385 390 395

<210> 8583  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 8583  
 Leu Lys Asn Met Tyr Leu Cys Arg Gln Ile Lys Lys Arg Gln Pro Leu  
 1 5 10 15  
 Glu Leu Leu Ile Leu Tyr Leu Val Ile Val Asn Thr Val Ser Phe Val  
 20 25 30  
 Met Tyr Gly Ile Asp Lys Arg Asn Ala Ser Arg Lys Arg Trp Arg Thr  
 35 40 45  
 Pro Glu Val His Leu Leu Gly Ile Ala Val Ala Gly Gly Ser Leu Gly  
 50 55 60  
 Ala Trp Ala Gly Met Tyr Thr Phe Arg His Lys Thr Arg His Leu Lys  
 65 70 75 80  
 Phe Lys Tyr Gly Ile Pro Val Ile Gly Val Leu Gln Val Gly Met Ala  
 85 90 95  
 Ile Cys Leu Leu Ser Glu Phe Thr  
 100 105

<210> 8584  
 <211> 81  
 <212> PRT  
 <213> B.fragilis

<400> 8584  
 Ser Ile Ser Ile Ile Lys Ile His Arg Glu Asp Ile Trp Ile Ser Ile  
 1 5 10 15  
 Lys Tyr Leu Arg His Leu Ile Glu Leu Leu Val Leu Ala Ser Lys Thr  
 20 25 30  
 Lys Asp Val Ser Phe Val Ile Arg Gln Lys Glu Glu Thr Gln Gly Asn  
 35 40 45  
 Thr Val Glu Ile Tyr Ser Ile Thr Leu Leu Lys Asp Ile His Thr Asn  
 50 55 60  
 Arg Thr Asp Tyr Ala Ile Leu Leu Asn Val Pro Asp Thr Val Ile Ala  
 65 70 75 80  
 Tyr

<210> 8585  
 <211> 247  
 <212> PRT  
 <213> B.fragilis

<400> 8585  
 Leu Arg Ile Leu Gly Ile Leu Arg Ser Leu Arg Arg Glu Glu Glu Val  
 1 5 10 15  
 Gln Ala Thr Ile Asp Thr Tyr Leu Tyr Leu Pro Glu Ile Arg Lys His  
 20 25 30  
 Glu Val Gln Arg Phe Ile Ala Asn Arg Gln Tyr Asp Ser Ala Ile Leu  
 35 40 45  
 Leu Leu Asp Glu Gly Ile Arg Ile Ala Gln Lys Asn Arg Tyr Leu Gly

50	55	60
Thr Ile Arg Asp Trp Leu Glu Gln Lys Leu Ser Ile Tyr Glu Glu Thr		
65	70	75
Asn Gln Thr Val Asn Ile Ile Asp Leu Cys Gln Gln Leu Phe Ile Ser		80
	85	90
Gly Asn Gly Asp Ile Thr Tyr Tyr His Lys Leu Lys Lys Leu Ile Ala		95
	100	105
Thr Asn Glu Trp Lys Lys Phe Leu Ser Gly Leu Met Lys Gln Ile Thr		110
	115	120
Phe Ser Gly His Gly Tyr Ser Gly Gln Cys Asn Lys Met Asp Ile Tyr		125
	130	135
Val Glu Glu Lys Asp Tyr Glu Asn Leu Leu Lys Met Leu Ser Asp His		140
145	150	155
His Ser Ser Leu Asp Met Leu Met His Tyr Ser His His Leu Asp Asn		160
	165	170
Asn Tyr Ser Thr Glu Ile Met Gln Leu Phe Thr Glu Gln Ile Asn Arg		175
	180	185
Tyr Ala Glu Met Asn Ile Gly Arg Asn His Tyr Glu Tyr Ile Glu Gln		190
	195	200
Val Leu Lys Glu Met Lys Lys Leu Lys Asp Gly Lys Lys Thr Val Glu		205
	210	215
Asp Ile Val Lys Lys Phe Arg Ile Ala Tyr Lys Arg Arg Pro Ala Met		220
225	230	235
Met Glu Thr Leu Ser Lys Phe		240
	245	

<210> 8586  
 <211> 206  
 <212> PRT  
 <213> B.fragilis

<400> 8586  
 Ile Arg Thr Met Asp Leu Asp Phe Asp Lys Met Asn Gly Leu Val Pro  
 1 5 10 15  
 Ala Ile Ile Gln Asp Asn Asp Thr Arg Lys Val Leu Met Leu Gly Phe  
 20 25 30  
 Met Asn Lys Glu Ala Tyr Glu Lys Thr Val Glu Thr Gly Lys Val Thr  
 35 40 45  
 Phe Phe Ser Arg Thr Lys Asn Arg Leu Trp Thr Lys Gly Glu Glu Ser  
 50 55 60  
 Gly Asn Phe Leu Asn Val Val Ser Ile Lys Glu Asp Cys Asp Lys Asp  
 65 70 75 80  
 Thr Leu Leu Ile Gln Val Asn Pro Val Gly Pro Val Cys His Thr Gly  
 85 90 95  
 Thr Asp Thr Cys Trp Gly Glu Lys Asn Glu Glu Pro Val Met Phe Leu  
 100 105 110  
 Lys Leu Leu Gln Asp Phe Ile Asp Arg Arg His Glu Glu Met Pro Glu  
 115 120 125  
 Lys Ser Tyr Thr Thr Ser Leu Phe Gln Ser Gly Ile Asn Lys Ile Ala  
 130 135 140  
 Gln Lys Val Gly Glu Glu Ala Val Glu Thr Val Ile Glu Ala Thr Asn  
 145 150 155 160  
 Gly Thr Asp Asp Arg Leu Ile Tyr Glu Gly Ser Asp Leu Ile Tyr His  
 165 170 175  
 Leu Ile Val Leu Leu Thr Ser Lys Gly Tyr Arg Ile Glu Asp Leu Ala  
 180 185 190  
 Arg Glu Leu Gln Ile Arg His Ser Asp Ser Trp Thr Lys His  
 195 200 205

<210> 8587  
 <211> 407  
 <212> PRT  
 <213> B.fragilis

<400> 8587

Pro	Leu	Tyr	Met	Thr	Thr	Phe	His	Ser	Ile	Asp	Glu	Leu	Leu	Lys	Met
1				5					10					15	
Met	Ser	Arg	Glu	Gln	Leu	Leu	Leu	Lys	Gln	Met	Phe	Gly	Lys	Arg	Lys
			20					25					30		
Gln	Gln	Ser	Phe	Arg	Arg	Glu	Tyr	Ala	Leu	Glu	Leu	Thr	Glu	Tyr	Lys
			35				40					45			
Leu	Gln	Arg	Ile	Gln	Ser	Leu	Ile	Asp	His	Gly	Val	Leu	Arg	Glu	Asn
	50					55					60				
Gly	Ser	Phe	Leu	Glu	Met	Glu	Asp	Ile	Tyr	Leu	His	Phe	Phe	Glu	Gln
65					70					75					80
Val	Leu	Glu	Ile	Asn	Glu	Glu	Ile	Asn	Thr	Ser	Phe	Val	Asn	Glu	His
				85					90					95	
Ile	Ser	Tyr	Leu	Lys	Asp	Thr	Ile	Ser	Tyr	Tyr	Gln	Gln	Glu	Asn	His
			100					105					110		
Glu	Lys	Arg	Lys	Thr	Thr	Tyr	Leu	Arg	Thr	Ile	Lys	Arg	Ile	Leu	Arg
			115				120						125		
Asn	Ile	Ala	Leu	Thr	Thr	Leu	Arg	Asn	Val	Ile	Asp	Leu	Lys	Arg	Asn
	130					135					140				
Ile	Asp	Ser	Thr	Phe	Lys	Asn	Glu	Pro	Asn	Tyr	Gln	Ile	Lys	Lys	Lys
145					150					155					160
Lys	Leu	Val	Arg	Leu	Asp	Glu	Lys	Arg	Arg	Asp	Ile	Glu	Ala	Leu	Ile
				165					170					175	
Arg	Val	Ser	Glu	Glu	Leu	Leu	Val	Thr	Glu	Glu	Asp	Arg	Phe	Phe	Arg
			180					185					190		
Arg	Val	Pro	Asp	Asp	Glu	Leu	Val	Leu	Val	Val	Ala	Asn	Val	Arg	Ile
		195				200						205			
Gln	Leu	Asn	Glu	Cys	Phe	His	Asn	Leu	Ile	Glu	Ile	Gln	Lys	Gln	Ile
	210					215						220			
Ile	Ser	Tyr	Leu	Asn	Arg	Ile	Glu	Tyr	Gln	Asn	Lys	Ile	Arg	Val	Lys
225					230					235					240
Ile	Arg	Gln	Leu	Lys	Tyr	Leu	Lys	Asp	Gln	Phe	Glu	Leu	Glu	Glu	Arg
				245					250					255	
Thr	Asp	Ile	Cys	Arg	Val	Leu	Met	Gln	Lys	Asp	Ser	Val	Trp	Phe	Glu
			260					265					270		
Pro	Ala	Pro	Ala	Tyr	Pro	Leu	Arg	Leu	Ser	Val	Glu	Tyr	Leu	Arg	Asn
			275				280					285			
Asp	Asp	Glu	Val	Leu	Glu	Ser	Ile	Arg	Lys	Val	Ile	Ala	Thr	Val	Gly
	290					295					300				
Lys	Arg	Ala	Ile	Leu	Ala	Arg	Asn	Val	Ala	Asp	Ser	Ile	Ala	Glu	Glu
305					310					315					320
Ser	Leu	Glu	Thr	His	Ile	Ser	Glu	Glu	Ala	Tyr	Ile	Asn	Leu	Glu	Glu
				325					330					335	
Val	Lys	Lys	Arg	Phe	Met	Gln	Ala	Asp	Gly	Asp	Leu	Phe	Ser	Phe	Val
			340					345					350		
Ala	Ala	Tyr	Pro	Phe	Thr	Gln	Glu	Val	Ser	Phe	Asp	Glu	Arg	Ile	Thr
		355				360						365			
Phe	Tyr	Cys	Gln	Ile	Val	Ser	Gln	Phe	Tyr	Glu	Glu	Leu	Arg	Ile	Thr
	370					375					380				
Asp	Glu	Tyr	Gly	Arg	Met	Asp	Gly	Val	Glu	Tyr	Ala	Leu	Ile	Tyr	Pro
385					390					395					400
Glu	Arg	Thr	Gly	Glu	Ile	Val									
				405											

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405

<210> 8588  
 <211> 68  
 <212> PRT  
 <213> B.fragilis

<400> 8588  
 Leu Asn Ile Ile Glu Thr Glu Leu Asn Asp Tyr Pro Gln Phe Lys Lys  
 1 5 10 15  
 Lys Val Ser Phe His Asp Lys Thr Thr Lys Leu Lys Lys Glu Leu Lys  
 20 25 30  
 Thr Leu Ile Lys Thr Trp Asp Lys Tyr Thr Lys Asp Leu Arg Ile Phe  
 35 40 45  
 Leu Phe Val Asp Asp Ile Asp Arg Tyr Ser Glu Lys Lys Ile Ile Gln  
 50 55 60  
 Ser Ile Asp Ser  
 65

<210> 8589  
 <211> 199  
 <212> PRT  
 <213> B.fragilis

<400> 8589  
 Asn Ile Lys Met Lys Val Ala Val Ile Lys Tyr Asn Ala Gly Asn Ile  
 1 5 10 15  
 Arg Ser Val Asp Tyr Ala Leu Lys Arg Leu Gly Val Glu Ala Val Ile  
 20 25 30  
 Thr Ser Asp Lys Glu Val Leu Lys Ala Ala Asp Lys Val Ile Phe Pro  
 35 40 45  
 Gly Val Gly Glu Ala Glu Thr Thr Met Leu His Leu Lys Glu Ser Gly  
 50 55 60  
 Met Asp Arg Phe Ile Lys Glu Leu Arg Gln Pro Val Leu Gly Ile Cys  
 65 70 75 80  
 Leu Gly Met Gln Leu Met Cys Arg Phe Ser Glu Glu Gly Asn Val Asp  
 85 90 95  
 Cys Leu Gly Ile Phe Asp Thr Asp Val Lys Arg Phe Ala Pro Arg Lys  
 100 105 110  
 His Glu Glu Lys Val Pro His Met Gly Trp Asn Thr Ile Ser Cys Leu  
 115 120 125  
 Lys Ser Asp Leu Phe Lys Gly Phe Thr Arg Asp Glu Phe Val Tyr Phe  
 130 135 140  
 Val His Ser Tyr Tyr Val Pro Val Ser Glu Phe Thr Ala Ala Glu Thr  
 145 150 155 160  
 Asp Tyr Ile Arg Pro Phe Ser Ala Ala Leu His Lys Asp Asn Phe Tyr  
 165 170 175  
 Ala Thr Gln Phe His Pro Glu Lys Ser Gly Glu Ala Gly Glu Arg Ile  
 180 185 190  
 Ile Lys Asn Phe Leu Glu Leu  
 195

<210> 8590  
 <211> 390  
 <212> PRT  
 <213> B.fragilis

<400> 8590  
 Leu Phe Lys Met Lys Thr Val Phe Pro Ile His Lys Phe Arg Glu Leu  
 1 5 10 15  
 Pro Thr Pro Phe Tyr Tyr Tyr Asp Thr Lys Val Leu Arg Asp Thr Leu

			20					25					30				
Ala	Cys	Val	Asn	Arg	Glu	Val	Ala	Arg	Tyr	Asp	Asn	Phe	Ser	Val	His		
		35					40					45					
Tyr	Ala	Val	Lys	Ala	Asn	Ala	Asn	Pro	Lys	Val	Leu	Thr	Ile	Ile	Arg		
	50					55					60						
Glu	Ser	Gly	Leu	Gly	Ala	Asp	Cys	Val	Ser	Gly	Gly	Glu	Ile	Arg	Ala		
65					70					75					80		
Ala	Ile	Lys	Ala	Gly	Phe	Pro	Ala	Gly	Lys	Ile	Val	Phe	Ala	Gly	Val		
			85						90					95			
Gly	Lys	Ala	Asp	Trp	Glu	Ile	Asp	Leu	Gly	Leu	Asp	Tyr	Asp	Ile	Phe		
			100					105					110				
Cys	Phe	Asn	Val	Glu	Ser	Val	Pro	Glu	Leu	Glu	Val	Ile	Asn	Glu	Leu		
		115					120					125					
Ala	Ala	Ala	Lys	Gly	Lys	Val	Ala	Asn	Val	Ala	Phe	Arg	Ile	Asn	Pro		
	130						135				140						
Asn	Val	Gly	Ala	His	Thr	His	Ala	Asn	Ile	Thr	Thr	Gly	Leu	Ala	Glu		
145					150					155					160		
Asn	Lys	Phe	Gly	Ile	Ser	Met	His	Asp	Met	Asp	Lys	Val	Ile	Asp	Val		
			165					170						175			
Ala	Leu	Glu	Leu	Lys	His	Val	Lys	Phe	Ile	Gly	Leu	His	Phe	His	Ile		
		180						185					190				
Gly	Ser	Gln	Ile	Leu	Asp	Met	Gly	Asp	Phe	Ile	Ala	Leu	Cys	Asn	Arg		
	195						200					205					
Val	Asn	Glu	Leu	Gln	Asp	Lys	Leu	Glu	Ala	Arg	His	Ile	Leu	Val	Glu		
	210					215					220						
His	Ile	Asn	Val	Gly	Gly	Gly	Leu	Gly	Ile	Asp	Tyr	Asp	His	Pro	Asn		
225					230					235					240		
Arg	Gln	Pro	Ile	Pro	Asp	Leu	Ala	Asp	Ile	Ser	Arg	Thr	Tyr	Asp	Glu		
				245					250					255			
Pro	Leu	Lys	Phe	Arg	Pro	His	Gln	Thr	Leu	His	Phe	Glu	Leu	Gly	Arg		
			260					265					270				
Ala	Ile	Thr	Gly	Gln	Cys	Gly	Ser	Leu	Ile	Ser	Lys	Val	Leu	Tyr	Val		
	275						280					285					
Lys	Gln	Gly	Thr	Asn	Lys	Gln	Phe	Ala	Ile	Leu	Asp	Ala	Gly	Met	Thr		
	290					295					300						
Asp	Leu	Ile	Arg	Pro	Ala	Leu	Tyr	Gln	Ala	His	His	Lys	Met	Glu	Asn		
305					310				315					320			
Leu	Thr	Ser	Glu	Asp	Pro	Val	Val	Glu	Thr	Tyr	Asp	Val	Val	Gly	Pro		
			325						330					335			
Ile	Cys	Glu	Ser	Ser	Asp	Val	Phe	Gly	Lys	Ala	Val	Asp	Leu	Asn	Lys		
			340					345					350				
Val	Lys	Arg	Gly	Asp	Leu	Ile	Ala	Leu	Arg	Ser	Ala	Gly	Ala	Tyr	Gly		
		355					360					365					
Glu	Ile	Met	Ala	Ser	Gly	Tyr	Asn	Cys	Arg	Glu	Leu	Pro	Lys	Gly	Tyr		
	370					375					380						
Ile	Ser	Glu	Glu	Leu	Val												
385					390												

&lt;210&gt; 8591

&lt;211&gt; 377

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8591

Arg	Lys	Lys	Ile	Ile	Asn	Ile	His	Thr	Asn	Phe	Asn	Thr	Val	Thr	Lys
1				5					10					15	
Met	Lys	Val	Leu	Lys	Phe	Gly	Gly	Thr	Ser	Val	Gly	Ser	Ala	Gln	Arg
		20						25				30			
Met	Lys	Glu	Val	Ala	Lys	Leu	Ile	Thr	Asp	Gly	Glu	Arg	Lys	Ile	Val

35	40	45
Val Leu Ser Ala Met Ser Gly Thr Thr Asn Thr Leu Val Glu Ile Ser		
50	55	60
Asp Tyr Leu Tyr Lys Lys Asn Pro Glu Gly Ala Asn Glu Ile Ile Asn		
65	70	75
Lys Leu Glu Ala Lys Tyr Lys Gln His Val Asp Glu Leu Tyr Ala Thr		
85	90	95
Glu Glu Tyr Lys Gln Lys Gly Leu Glu Val Ile Lys Ser His Phe Asp		
100	105	110
Tyr Ile Arg Ser Tyr Thr Lys Asp Leu Phe Thr Leu Phe Glu Glu Lys		
115	120	125
Val Val Leu Ala Gln Gly Glu Leu Ile Ser Thr Ala Met Val Asn Tyr		
130	135	140
Tyr Leu Gln Glu Cys Gly Val Lys Ser Val Leu Leu Pro Ala Leu Glu		
145	150	155
Tyr Met Arg Thr Asp Lys Asn Ala Glu Pro Asp Pro Val Tyr Ile Lys		
165	170	175
Asp Lys Leu Gln Ala Gln Leu Asp Leu Tyr Pro Asp Ala Glu Ile Tyr		
180	185	190
Ile Thr Gln Gly Phe Ile Cys Arg Asn Ala Tyr Gly Glu Ile Asp Asn		
195	200	205
Leu Gln Arg Gly Gly Ser Asp Tyr Thr Ala Ser Leu Val Gly Ala Ala		
210	215	220
Ile His Ala Ser Glu Ile Gln Ile Trp Thr Asp Ile Asp Gly Met His		
225	230	235
Asn Asn Asp Pro Arg Ile Val Asp Lys Thr Ala Pro Val Arg Gln Leu		
245	250	255
His Phe Glu Glu Ala Ala Glu Leu Ala Tyr Phe Gly Ala Lys Ile Leu		
260	265	270
His Pro Thr Cys Ile Gln Pro Ala Lys Tyr Ala Asn Ile Pro Val Arg		
275	280	285
Leu Leu Asn Thr Met Asp Pro His Ala Pro Gly Thr Leu Ile Ser Asn		
290	295	300
Asp Thr Glu Lys Gly Lys Ile Lys Ala Val Ala Ala Lys Gly Asn Ile		
305	310	315
Thr Ala Ile Lys Ile Lys Ser Ser Arg Met Leu Leu Ala His Gly Phe		
325	330	335
Leu Arg Lys Val Phe Glu Ile Phe Glu Ser Tyr Gln Thr Ser Ile Asp		
340	345	350
Met Ile Cys Thr Ser Glu Val Glu Phe Pro Tyr Leu Ser Ile Thr Pro		
355	360	365
Ser Ile Ser Thr Arg Ser Trp Met Thr		
370	375	

&lt;210&gt; 8592

&lt;211&gt; 446

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8592

Lys Lys Glu Ile Gln Met Asn Ile Ala Ile Ser Gly Ala Ser Gly Phe		
1	5	10
Ile Gly Lys His Leu Thr Glu Tyr Leu Thr Glu Val Gly His Arg Val		
20	25	30
Ile Pro Leu Gly Arg Pro Met Phe Arg Glu Gly Thr Ser Gly His Leu		
35	40	45
Ile Gln Ala Leu Ser His Cys Asp Val Ile Ile Asn Leu Ala Gly Ala		
50	55	60
Pro Ile Gly Lys Arg Trp Thr Pro Glu Tyr Lys Lys Glu Leu Tyr Asp		

65					70					75				80	
Ser	Arg	Ile	Lys	Val	Thr	His	Cys	Ile	Ile	Arg	Ala	Met	Asp	Ala	Val
				85					90					95	
Lys	Thr	Lys	Pro	Arg	Leu	Met	Ile	Ser	Ala	Ser	Ala	Val	Gly	Tyr	Tyr
			100					105					110		
Pro	Glu	Glu	Gly	Thr	Phe	Asp	Glu	Tyr	Thr	Asn	Thr	Arg	Gly	Ser	Gly
		115					120					125			
Phe	Leu	Ala	Glu	Leu	Cys	Tyr	Ala	Trp	Glu	Lys	Glu	Ala	Arg	Arg	Cys
	130					135					140				
Pro	Ser	Gln	Thr	Arg	Leu	Val	Ile	Thr	Arg	Phe	Gly	Ile	Val	Leu	Ser
145					150					155					160
Pro	Asp	Gly	Gly	Ala	Met	Glu	Gln	Met	Leu	Arg	Pro	Leu	Arg	Ile	Thr
				165					170					175	
Arg	Val	Ala	Gly	Val	Ile	Gly	Pro	Gly	Thr	Gln	Pro	Phe	Pro	Trp	Ile
			180					185					190		
Ala	Ile	Gln	Asp	Leu	Cys	Arg	Ala	Met	Glu	Phe	Ile	Ile	Ser	His	Glu
		195					200					205			
Glu	Ala	Ser	Gly	Val	Phe	Asn	Leu	Val	Thr	Pro	Gln	Gln	Val	Ser	Gln
	210					215					220				
Tyr	Ala	Phe	Thr	Gln	Ala	Met	Ala	Ala	Arg	Tyr	His	Ala	Trp	Met	Lys
225					230					235					240
Ala	Val	Val	Pro	Arg	Trp	Phe	Phe	Arg	Met	Arg	Tyr	Gly	Glu	Ala	Ala
				245					250					255	
Ser	Phe	Leu	Ala	Ser	Gly	Gln	Asn	Val	Arg	Pro	Thr	Arg	Leu	Leu	Glu
			260					265					270		
Ala	Gly	Phe	Arg	Phe	Ala	Lys	Pro	Thr	Ile	Glu	Asp	Phe	Phe	Glu	Gly
		275					280					285			
Thr	Asp	His	Ala	Ala	Val	Asp	Arg	Leu	Asp	Leu	His	Arg	Tyr	Met	Gly
	290					295					300				
Thr	Trp	Tyr	Glu	Ile	Ala	Arg	Phe	Asp	His	Arg	Phe	Glu	Arg	Gly	Leu
305					310					315					320
Ser	Glu	Val	Thr	Ala	Thr	Tyr	Thr	Leu	Met	Pro	Asp	Gly	Thr	Val	Arg
				325					330					335	
Val	Glu	Asn	Arg	Gly	Cys	Lys	His	Lys	Lys	Pro	Tyr	Asp	Val	Cys	Lys
			340					345					350		
Thr	Ala	Glu	Gly	Arg	Ala	Lys	Ile	Pro	Asp	Pro	Ser	Gln	Pro	Gly	Lys
		355					360					365			
Leu	Lys	Val	Ser	Phe	Phe	Leu	Ser	Phe	Tyr	Ser	Asp	Tyr	Tyr	Val	Leu
	370					375					380				
Glu	Leu	Asp	Gln	Asp	Glu	Tyr	Asn	Tyr	Ala	Leu	Ile	Gly	Ser	Ser	Ser
385					390					395					400
Asp	Lys	Tyr	Leu	Trp	Ile	Leu	Ser	Arg	Ala	Pro	Ile	Leu	Pro	Glu	Glu
				405					410					415	
Ile	Lys	Lys	Lys	Leu	Leu	Asp	Ala	Ala	Thr	Arg	Arg	Gly	Tyr	Asp	Val
			420					425					430		
Lys	Lys	Leu	Ile	Trp	Val	Glu	Gln	Arg	Glu	Lys	Lys	Ile	Met		
		435					440					445			

&lt;210&gt; 8593

&lt;211&gt; 320

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8593

Ser	Gly	Pro	Ile	Cys	Arg	Pro	Glu	Asp	Ser	Pro	Tyr	Leu	Cys	His	Met
1				5					10					15	
Ala	Glu	Arg	Asn	Glu	Leu	His	Lys	Arg	Asn	Arg	His	Asn	Gly	Gln	Tyr
			20					25					30		
Asp	Phe	Ser	Arg	Leu	Thr	Glu	Glu	Tyr	Pro	Pro	Leu	Lys	Lys	Phe	Ile



35	40	45
Val Leu Asn Ala Tyr Gly Thr Thr Ser Ile Asp Phe Phe Asn Pro Arg		
50	55	60
Ala Val Lys Ala Leu Asn Lys Ala Leu Leu Ile Ser Tyr Tyr Gly Ile		
65	70	75
Arg Tyr Trp Asp Ile Pro Lys Asn Tyr Leu Cys Pro Pro Ile Pro Gly		80
	85	90
Arg Ala Asp Tyr Ile His Tyr Ile Ala Asp Leu Ile Gln Pro Asp Ile		95
	100	105
Ser Asp Glu Ser Thr Gly Leu Lys Thr Ala Val Pro Asn Thr Arg Gln		110
	115	120
Tyr Arg Cys Leu Asp Ile Gly Val Gly Ala Asn Cys Ile Tyr Pro Ile		125
	130	135
Ile Gly Gln Thr Glu Tyr Gly Trp Thr Phe Val Gly Ser Asp Ile Asp		140
145	150	155
Pro Val Ser Ile Asp Asn Ala Arg Lys Ile Val Thr Cys Asn Pro Ala		160
	165	170
Leu Ala His Lys Ile Glu Leu Arg Leu Gln Gln Asp Ser Arg Lys Ile		175
	180	185
Phe Glu Gly Ile Ile Ala Pro Asn Glu Tyr Phe Asp Val Thr Leu Cys		190
	195	200
Asn Pro Pro Phe His Ser Ser Lys Glu Glu Ala Glu Asp Gly Thr Leu		205
	210	215
Arg Lys Leu Ser Ser Leu Lys Gly Gln Lys Val Thr Lys Ala Arg Leu		220
225	230	235
Asn Phe Gly Gly Asn Ala Asn Glu Leu Trp Cys Glu Gly Gly Glu Leu		240
	245	250
Arg Phe Leu Leu Thr Met Ile Glu Glu Ser Arg Asn Tyr Arg Lys Asn		255
	260	265
Cys Gly Trp Phe Thr Ser Leu Val Ser Lys Glu Lys Asn Leu Gly Lys		270
	275	280
Leu Thr Ala Lys Leu Lys Ser Thr Asp Ile Ala Glu His Arg Ile Ile		285
	290	295
Glu Met His Gln Gly Thr Lys Thr Ser Arg Ile Leu Ala Trp Arg Phe		300
305	310	315
		320

&lt;210&gt; 8594

&lt;211&gt; 303

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8594

Gln Asp Arg Ile Thr Ala Leu Ser Val Lys Pro Ala Thr Phe Val Pro		
1	5	10
Glu Pro Asn Gly Thr Lys Thr Met Lys Ser Asp Thr Glu Glu Lys Tyr		15
	20	25
Leu Gln Gln Val Asn Arg Val Ile Asp Tyr Ile Asn Ser His Leu Asn		30
	35	40
Glu Pro Leu Arg Val Glu Thr Leu Ala Arg Glu Val Cys Leu Ser Glu		45
	50	55
Tyr His Phe His Arg Ile Met Arg Ala Tyr Leu His Glu Pro Leu Ala		60
65	70	75
Thr Tyr Ile Ala Arg Gln Arg Val Glu Arg Ala Val Met Tyr Leu Gln		80
	85	90
Met Lys Asn Ile Arg Leu Ala Gln Val Ala Glu Met Val Gly Tyr Glu		95
	100	105
Thr Pro Gln Ser Leu Ser Lys Ala Phe Lys Gln Phe Phe Gly Ile Ser		110
	115	120
Pro Thr Ala Tyr Arg Lys Arg Arg Ala Glu Arg Tyr Glu Glu Phe Ser		125

130		135		140
Thr Leu Lys Lys Glu Ser Leu Lys Pro Glu Ile Leu Thr Glu Pro Glu				
145		150		155
Leu Lys Leu Val Tyr Ile Arg Ile Ile Gly Arg Tyr Gly Glu Glu Glu				
	165		170	175
Pro Tyr Ile Glu Ala Trp Arg Lys Leu Arg Asp Phe Leu Gln Ile Asn				
	180		185	190
Gly Leu Leu Thr Pro Ser Thr Arg Trp Ile Gly Ile Ser Phe Asp Asp				
	195		200	205
Pro Thr Val Thr Lys Thr Glu Gln Cys Arg Phe Tyr Ala Cys Ala Thr				
	210		215	220
Val Glu His Asp Val Ser Pro Gln Gly Ala Phe Gly Met Lys Thr Ile				
225		230		235
Pro Gln Gly Arg Tyr Ala Val Tyr Thr Leu Arg Gly Ser Tyr Ser Gly				
	245		250	255
Leu Gln Glu Met Tyr Asp Arg Ile Tyr Ser His Pro Leu Pro Thr Ala				
	260		265	270
Phe Arg Asp Ala Thr Ser Phe Glu Glu Tyr Leu Asn Cys Glu Pro Asp				
	275		280	285
Met Glu Glu Lys Asp Tyr Val Thr Arg Ile Tyr Ile Pro Ile Glu				
	290		295	300

<210> 8595  
 <211> 256  
 <212> PRT  
 <213> B.fragilis

<400> 8595

Arg Pro Leu Val Pro Ser Leu Asn Asp Tyr Arg Ile Gly Tyr Ser Leu				
1	5	10	15	
Phe Pro Glu Ile Ile Asp Leu Ser Asn Tyr Lys Trp Val Val Phe Tyr				
	20	25	30	
Ser Gln Glu Leu Val Gly Ser Ile Gly Lys Arg Trp Phe Ser Cys Ser				
	35	40	45	
Ile Glu Val Tyr Cys Cys Leu Phe Cys Arg Val Gly Gly Glu Tyr Ser				
	50	55	60	
Phe Tyr Lys Leu Ile Phe Val Phe Gln Tyr Phe Gly His Leu Arg Leu				
65	70	75	80	
Tyr Ser Cys Arg Ile Tyr Val Ser Thr Thr His Lys Gly Lys Lys Lys				
	85	90	95	
Asn Trp Asp Leu Ser Phe Ile Ala Phe His Phe Leu Phe Leu Leu				
	100	105	110	
Phe Leu His Pro Leu Ser Ser Lys Pro Asn Thr Ala Val Ile Met Lys				
	115	120	125	
Ser Ile Glu Val Val Ala Ala Val Ile Arg Ser Gly Gly Lys Tyr Leu				
	130	135	140	
Cys Val Gln Arg Gly Arg Thr Lys Phe Ser Tyr Thr Ser Phe Arg Tyr				
145	150	155	160	
Glu Phe Pro Gly Gly Lys Val Glu Lys Gly Glu Ser Leu Gln Glu Ala				
	165	170	175	
Leu Gln Arg Glu Ile Met Glu Glu Met Asp Tyr Thr Ile Glu Val Gly				
	180	185	190	
Glu Lys Leu Leu Thr Val His His Ile Tyr Pro Asp Phe Glu Ile Thr				
	195	200	205	
Met His Ala Phe Leu Cys His Pro Ile Gly Glu Gln Tyr Val Leu Lys				
	210	215	220	
Glu His Ile Ala Ala Gln Trp Leu Phe Pro Gly Glu Met Val Thr Leu				
225	230	235	240	
Asp Trp Ala Glu Ala Asp Lys Pro Val Val Lys Lys Ile Ser Glu Gln				

<210> 8596  
 <211> 319  
 <212> PRT  
 <213> B.fragilis

<400> 8596

Ala	Ile	Cys	Phe	Thr	Leu	Pro	Val	Ser	Leu	Ser	Trp	Leu	Ala	Val	Leu
1				5					10					15	
Gly	His	Gly	Ser	Leu	Leu	Ile	Lys	Gln	Pro	His	Pro	Pro	Ala	Ser	Arg
			20					25					30		
Leu	Leu	Gln	Asp	Lys	Ile	Trp	Lys	Ile	Gln	Leu	Ile	His	Phe	Pro	His
		35					40					45			
Ser	Val	Pro	Cys	Leu	Ile	Phe	Ile	Ser	Tyr	Leu	Cys	Leu	Lys	Pro	Leu
	50					55					60				
Asp	Met	Asn	Ser	Asp	Met	Lys	Arg	Ala	Ile	Ile	Ile	Gly	Ala	Thr	Ser
65					70					75					80
Gly	Ile	Gly	Arg	Glu	Val	Ala	Lys	Gln	Leu	Leu	Leu	Gln	Gly	Trp	Arg
				85					90					95	
Leu	Gly	Ile	Ala	Gly	Arg	Arg	Leu	Pro	Ala	Leu	Glu	Ala	Leu	Gln	Ser
			100					105						110	
Ser	Ala	Pro	Asp	Leu	Ile	Glu	Ile	Ala	Val	Leu	Asp	Val	Thr	Gln	Pro
		115					120					125			
Asp	Ala	Thr	Pro	Lys	Leu	Asn	Asn	Leu	Ile	Arg	Arg	Val	Gly	Gly	Met
	130					135						140			
Asp	Leu	Phe	Leu	Leu	Ser	Ser	Gly	Ile	Gly	Tyr	Gln	Asn	Met	Glu	Leu
145					150					155					160
Asn	Pro	Asp	Ile	Glu	Leu	Asp	Thr	Ala	Arg	Thr	Asn	Val	Glu	Gly	Phe
				165					170					175	
Met	Arg	Met	Ala	Asp	Thr	Ala	Phe	His	His	Phe	Arg	Glu	His	Gly	Gly
			180					185					190		
Gly	Gln	Leu	Ala	Val	Ile	Ser	Ser	Ile	Ala	Gly	Thr	Lys	Gly	Leu	Gly
		195					200					205			
Val	Ala	Pro	Ala	Tyr	Ser	Ala	Thr	Lys	Arg	Phe	Gln	Asn	Thr	Tyr	Ile
	210					215					220				
Asp	Ala	Leu	Glu	Gln	Leu	Ala	Gly	Met	Gln	Lys	Leu	Asn	Ile	Arg	Phe
225					230					235					240
Thr	Asp	Met	Arg	Pro	Gly	Phe	Val	Ser	Thr	Asp	Leu	Leu	Asn	Asp	Gly
				245					250					255	
Lys	His	Tyr	Pro	Leu	Leu	Met	Arg	Pro	Glu	Lys	Val	Ala	Lys	Arg	Ile
			260					265					270		
Val	Arg	Ala	Leu	Asn	Arg	Gln	Pro	Thr	Gly	Ser	Gly	Asp	Arg	Leu	Ala
		275					280					285			
Leu	Cys	His	Tyr	Arg	Leu	Phe	Met	Val	Asn	Asp	Ser	Ala	Pro	Asp	Met
	290					295					300				
Glu	Thr	Ile	Thr	His	Thr	Asp	Arg	Thr	Glu	Thr	Asp	Arg	Lys	Lys	
305					310					315					

<210> 8597  
 <211> 572  
 <212> PRT  
 <213> B.fragilis

<400> 8597

Ile	Ser	Leu	Phe	Tyr	Met	Lys	Arg	Leu	Ser	Thr	Leu	Cys	Leu	Leu	Ala
1				5					10					15	
Ala	Gly	Phe	Phe	Ile	Pro	Gly	Gln	Ala	His	Gln	Ala	Arg	Pro	Thr	Val
			20					25					30		

Leu Asp Ser Val Tyr Ala Pro Leu Lys Val Ala Thr Pro Pro Ser Asp  
 35 40 45  
 Ala Tyr Ile Gly Leu Ser Leu Leu Asp Asn Gly Glu Ile Arg His Tyr  
 50 55 60  
 Asn Tyr Gly Glu Gln Ala Val Ala Gly Thr Val Tyr Leu Ser Ser Thr  
 65 70 75 80  
 Asp His Gly Leu Thr Trp Lys Arg Val Asn Arg Pro Lys Glu Met Pro  
 85 90 95  
 Phe Ala Asp Cys Gln Ser Pro Val Ser Lys Glu Tyr Ile Arg Leu Val  
 100 105 110  
 Asp Met Gly Ala Met Gly Val Tyr Cys Ile Arg Thr Ser Gly Gly Leu  
 115 120 125  
 Thr Gly Gly Arg Thr Leu Thr Lys Val Ala Asp Arg Asn Ser Ile Met  
 130 135 140  
 Ile Lys Pro Pro Val Phe Ile Arg Asn Gly Lys Arg Ile Val Val Ala  
 145 150 155 160  
 Ala His Gly Gly Val Thr Pro Lys Gly Cys Tyr Thr Tyr Phe Ser Asp  
 165 170 175  
 Asp Asp Gly Leu Thr Trp Lys Cys Ser Asn Thr Val Thr Ser Pro Asp  
 180 185 190  
 His Gln Gly Gly Gly Phe His Lys Gly Ile Arg Trp Asn His Gly Ala  
 195 200 205  
 Val Glu Pro Thr Val Val Glu Leu Lys Asp Gly Thr Leu Trp Met Leu  
 210 215 220  
 Met Arg Thr Ser Gln Asp Phe His Tyr Gln Ala Phe Ser Lys Asp Gly  
 225 230 235 240  
 Gly Gln Thr Trp Gly Glu Ser Glu Pro Ser Pro Phe Tyr Gly Thr Ile  
 245 250 255  
 Thr Met Pro Thr Leu Gly Arg Leu Ala Asp Gly Arg Leu Leu Leu Phe  
 260 265 270  
 Trp Cys Asn Thr Thr Pro Leu Pro Glu Lys Glu Gly Thr Asp Gly Val  
 275 280 285  
 Trp Asp Asp Val Phe Thr Asn Arg Asp Val Thr His Val Ala Val Ser  
 290 295 300  
 Asp Asp Asp Gly Lys Thr Trp Lys Gly Phe Arg Glu Leu Tyr Met Asn  
 305 310 315 320  
 Pro Met Arg Asn Asp Ile Asp Tyr Ala Val His Gly Gly Gly Ile Asp  
 325 330 335  
 Arg Gly Val His Gln Ala Gln Phe Val Glu Val Ala Pro Gly Lys Val  
 340 345 350  
 Leu Ala Ser Ile Gly Gln His Pro Leu His Arg Ala Met Met Met Phe  
 355 360 365  
 Asp Val Asn Trp Leu Tyr Glu Lys Ser Arg Phe Asn Asp Phe Thr Asp  
 370 375 380  
 Ser Leu Ser Gln Trp Ser Thr Phe Asn Tyr Met Asn Gly Ile Lys Gly  
 385 390 395 400  
 His Cys Ala Tyr Asn Arg Ile Gln Gly Cys Met Leu Glu Pro His Pro  
 405 410 415  
 Arg Lys Glu Gly Arg Gln Val Leu His Leu Thr Tyr Arg Pro Asp Ala  
 420 425 430  
 Ser Leu Val Ala Asp Thr Arg Gly Ala Val Trp Asn Phe Pro Ala Met  
 435 440 445  
 Lys Lys Gly Thr Phe Thr Val Ser Leu Arg Ile Pro Glu Gly Ser His  
 450 455 460  
 Ser Val Ser Leu Leu Leu Asn Asp Arg Trp Met Asn Pro Ser Asp Thr  
 465 470 475 480  
 Val Ala Arg Tyr Gln Ser Met Tyr Glu Leu Pro Leu Thr Arg Lys Gln  
 485 490 495  
 Leu Gly Val Lys Asp Asp Arg Trp His Glu Val Ser Leu Glu Trp Asp

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 8598															
Trp	Arg	Leu	Ser	Ala	Ile	Trp	Lys	Ser	Trp	Ser	Leu	Ala	Leu	Thr	Tyr
1				5					10					15	
Gln	Lys	Arg	Tyr	Arg	Met	Arg	Tyr	Leu	Asn	Lys	Ile	Ile	Phe	Ile	Asn
			20					25					30		
Ser	Ala	Arg	Ile	Gln	Tyr	Ala	Glu	Ile	Gln	Ile	Asp	Gly	Asn	Val	His
			35				40					45			
Phe	Ile	Gly	Thr	Gln	Gly	Val	Gly	Lys	Ser	Thr	Ala	Leu	Arg	Ala	Leu
	50					55					60				
Leu	Phe	Phe	Tyr	Asn	Ala	Asp	Lys	Thr	Lys	Leu	Gly	Ile	Ser	Lys	Glu
65				70						75					80
Lys	Lys	Ser	Phe	Asp	Glu	Tyr	Tyr	Phe	Pro	Tyr	Val	Asn	Ser	Tyr	Ile
				85					90					95	
Ile	Tyr	Glu	Val	Val	Val	Asp	Asp	Ala	Ser	Tyr	Cys	Val	Leu	Ala	Phe
			100					105					110		
Arg	Ser	Gln	Gly	Arg	Val	Cys	Phe	Arg	Phe	Leu	Gly	Thr	Gly	Tyr	Lys
			115				120					125			
Lys	Glu	Tyr	Phe	Ile	Ser	Pro	Glu	Gly	Lys	Ala	Tyr	Glu	Glu	Trp	Asp
	130					135					140				
Gln	Ile	Arg	Asp	Ala	Leu	Gly	Ser	Phe	Val	Tyr	Lys	Ser	Arg	Arg	Ile
145				150						155					160
Glu	Thr	Tyr	Glu	Glu	Tyr	Arg	Asp	Ile	Ile	Phe	Gly	Asn	Gly	Arg	Gly
				165					170					175	
Leu	Pro	Pro	Glu	Phe	Arg	Lys	Phe	Ala	Ile	Thr	Glu	Ser	Arg	Gln	Tyr
			180					185					190		
Gln	Asn	Ile	Pro	Arg	Thr	Ile	Gln	Asn	Val	Phe	Leu	Asn	Ser	Lys	Leu
		195					200					205			
Asp	Ala	Glu	Phe	Ile	Lys	Gln	Thr	Ile	Ile	Met	Ser	Leu	Asn	Glu	Glu
	210					215					220				
Asp	Val	Arg	Ile	Asp	Leu	Gly	Gln	Tyr	Ala	His	His	Leu	Arg	Arg	Phe
225				230						235					240
Asp	Glu	Glu	Val	Thr	Asp	Ile	Ser	Lys	Trp	Phe	Arg	Lys	Asn	Lys	Asn
				245					250					255	
Gly	Glu	Val	Thr	Val	Arg	Arg	Gln	Ala	Asp	Arg	Val	Ile	Glu	Leu	Tyr
			260					265					270		
Arg	Glu	Met	His	Tyr	Leu	Glu	Gln	Gln	Ala	Arg	Thr	Leu	Ala	Gly	Glu
		275					280					285			
Leu	Asn	Tyr	Ala	Phe	Arg	Thr	Ala	Arg	Glu	Val	Leu	Pro	Ser	Leu	Gln
	290					295					300				
Lys	Gln	Lys	Glu	Glu	Leu	Lys	Glu	Val	Ala	Lys	Glu	Lys	Arg	Gln	
305				310					315						320
Leu	Glu	Glu	Leu	Ser	Gly	Lys	Phe	Gln	Ser	Glu	Arg	Asp	Arg	Leu	Leu
				325					330					335	
Gly	Val	Val	Lys	Val	Gln	Asn	Glu	Asn	Leu	Lys	Thr	Ala	Arg	Glu	Arg

340 345 350  
 Lys Glu Arg Tyr Glu Ser Gln Asp Ile His His Val Arg Glu Arg Val  
 355 360 365  
 Asn Ala Glu Ser Glu Ala Val Leu His Lys Gln Met Leu Glu Glu Gln  
 370 375 380  
 Leu Thr Met Leu Thr Ala Arg Phe Asp Asp Ile Asn Ser Gln Tyr Lys  
 385 390 395 400  
 Leu Leu Lys Glu Gln Ala Ala Ser Ala Phe Glu Arg Phe Arg Asn Gly  
 405 410 415  
 Lys Asn Ala Glu Leu Asn Thr Leu His Leu Arg Ala Ile Glu Arg Lys  
 420 425 430  
 Glu Ala Ile Arg Lys Glu Phe Asp Lys Ile Leu Lys Glu Val Arg Glu  
 435 440 445  
 Gln Glu Val Gly Lys Leu Thr Leu Leu Arg Glu Gln Thr Glu Lys Lys  
 450 455 460  
 Lys Glu Gly Ile Tyr Gln Leu Lys Met Glu Arg Glu Lys Cys Leu His  
 465 470 475 480  
 Arg Thr Leu His Glu Glu Glu Leu Gln Ala Cys Arg Thr Glu Arg Ala  
 485 490 495  
 Ala Leu Glu Lys Glu Asn His Glu Tyr Arg Leu Lys Gln Lys Glu Ala  
 500 505 510  
 Glu Gln Gln Met Glu Leu Val Arg Arg Arg Trp Glu Leu Asp Gln Thr  
 515 520 525  
 Ala Cys Glu Gln Gln Phe Thr Ala Arg Gln Lys Asp Ile Glu Gln Gln  
 530 535 540  
 Ile Thr Leu Ala Lys Glu Arg Val Ala Glu Ile Asp Arg Leu Leu Asp  
 545 550 555 560  
 Asn Arg Gln Gly Ser Phe Tyr Glu Trp Leu Ser Gln Asn Cys Gln Gly  
 565 570 575  
 Trp Glu Asp Thr Ile Gly Lys Val Val Asp Glu Lys Gln Val Leu Phe  
 580 585 590  
 Ser Lys Glu Leu Lys Pro Gln Ser Val Pro Asp Ala Gly Gln Asp Ser  
 595 600 605  
 Phe Tyr Gly Ile Lys Leu Asp Leu Ser Ala Ile Arg Lys Glu Val Lys  
 610 615 620  
 Ser Val Gln Glu Tyr Ala Ala Asp Gln Glu Ile Ala Gly Lys Glu Val  
 625 630 635 640  
 Ser Glu Trp Gln Gln Gln Leu Glu Lys Leu Gly Glu Glu Lys Glu Lys  
 645 650 655  
 Glu Leu Ala Leu Ile Arg Lys Arg His Gln Ala Thr Leu Ser Thr Cys  
 660 665 670  
 Lys Glu Asp Val Ala Gln Ser Thr Tyr Cys Met Glu Gln Asn Asp Lys  
 675 680 685  
 Arg Ile Arg Leu Leu Lys Ala Asp Glu Ile Arg Trp Glu Gln Lys Ala  
 690 695 700  
 Gly Glu Glu Lys Arg Val Leu Leu Glu Gln Leu Asp Lys Gln Leu Ala  
 705 710 715 720  
 Glu Ala Thr Arg Ser Leu Gln Gly Thr Val Ala Glu Leu Glu Gln Phe  
 725 730 735  
 Asn His Leu Leu Glu Thr Arg Val Arg Gln Lys Glu Lys Glu Arg Asn  
 740 745 750  
 Gln Arg Met Gln Glu Glu Asp Ala Leu Ile Arg Asn Lys Gln Glu Glu  
 755 760 765  
 Ile His Leu Ser Ile Ala Ser Glu Lys Gln Lys Thr Asp Glu Leu Leu  
 770 775 780  
 Ala Thr Met Asp Lys Asp Leu Leu His Glu Leu Ser Gly Lys Glu Trp  
 785 790 795 800  
 Ile Arg Ser Val Ser Leu Leu Leu Arg Asn Glu Val Ala Arg Thr Glu  
 805 810 815

Gln Glu Leu Val Phe Ile Asp Gln His Arg Arg Leu Val Tyr Asp Tyr  
 820 825 830  
 Glu Lys Asp Lys Arg Glu Phe Phe Asp Arg Met Asp Glu Phe Arg Asn  
 835 840 845  
 Glu Lys Gln Leu Ala Glu Lys Glu Leu Glu Gly Glu Lys Glu Lys Phe  
 850 855 860  
 Arg Leu Lys Glu Glu Glu Leu Asn Leu Lys Met Thr Gly Leu Asn Lys  
 865 870 875 880  
 Gln Leu Ala Glu Thr Asn Thr Arg Leu Lys His Leu Asp Glu Asp Ile  
 885 890 895  
 Arg Glu Thr Glu Asn Phe Lys Thr Leu Asn Ile Cys Pro Pro Val Leu  
 900 905 910  
 Gln Thr Gly Val Glu Thr Glu Asn Ala Lys Arg Cys Lys Lys Val Ile  
 915 920 925  
 Glu Glu Leu Thr Gln Asn His Tyr Arg Gln Ile Glu Gln Glu Lys Asp  
 930 935 940  
 Phe Arg Glu Ala Val Gly Arg Phe Ser Gly Asn Phe Ser Glu Gln Asn  
 945 950 955 960  
 Thr Phe Asn Phe Arg Thr Arg Leu Thr Lys Arg Glu Glu Phe Met Thr  
 965 970 975  
 Phe Ala Ala Asp Leu Lys Glu Phe Ile Asp Asn Asp Lys Ile Ile Asp  
 980 985 990  
 Phe Glu Arg Arg Ser Asn Glu Ala Tyr Thr Asp Leu Ile His Arg Ile  
 995 1000 1005  
 Gly Lys Glu Thr Thr Asp Met Leu Ser Lys Glu Gly Leu Ile Arg Lys  
 1010 1015 1020  
 Thr Ile Ser Asp Ile Asn Ser Asp Phe Val Glu Arg Asn Phe Ala Gly  
 1025 1030 1035 1040  
 Val Ile Lys Ser Ile Ala Leu Gln Ile Val Pro Ser Gly Asn Arg Ile  
 1045 1050 1055  
 Met Gln His Phe Val Thr Ile Lys Glu Phe Cys Asp Arg Asn Gln Pro  
 1060 1065 1070  
 Gly Ala Pro Gly Met Phe Ser Leu Phe Gly Gln Glu Asp Phe Val Glu  
 1075 1080 1085  
 Arg Asn Arg Gln Ala Val Ser Leu Leu Gln Ser Leu Val Lys Glu Leu  
 1090 1095 1100  
 Ala Leu Asn Lys Glu Lys Glu Leu Thr Leu Ser Asp Thr Phe Glu Leu  
 1105 1110 1115 1120  
 Gln Phe Arg Ile Val Glu Asn Asp Asn Asp Ser Gly Trp Val Glu Lys  
 1125 1130 1135  
 Leu Ala Asn Val Gly Ser Asp Gly Thr Asp Ile Leu Val Lys Ala Met  
 1140 1145 1150  
 Ile Asn Ile Met Leu Leu Asn Val Phe Lys Glu Lys Ala Ser His Gln  
 1155 1160 1165  
 Phe Asn Asp Phe Lys Leu His Cys Met Met Asp Glu Ile Gly Lys Leu  
 1170 1175 1180  
 His Pro Asn Asn Ile Lys Gly Ile Leu Asp Phe Ala Asn Asn Arg Asn  
 1185 1190 1195 1200  
 Ile Ile Leu Val Asn Ser Ser Pro Thr Ser Tyr Arg Ala Ser Asp Tyr  
 1205 1210 1215  
 Lys Tyr Thr Tyr Ile Leu Asn Lys Asp Lys Arg Asn Ile Thr Ser Val  
 1220 1225 1230  
 Thr Arg Leu Ile Lys Gln Glu Val Arg Glu  
 1235 1240

&lt;210&gt; 8599

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8599

Gly Arg Val Ser Val Ser Val Asp Asn Thr Lys His Leu Asn Glu Ile  
 1 5 10 15  
 Leu Asp Asp Leu Lys Lys Tyr Gly Thr Val Thr Val Asp Lys Asp Met  
 20 25 30  
 Cys Ile Ile Cys Val Val Gly Asp Leu Glu Trp Glu Asn Val Gly Phe  
 35 40 45  
 Glu Ala Lys Ala Leu Asp Ala Met Arg Asp Ile Thr Val Arg Met Ile  
 50 55 60  
 Ser Phe Gly Gly  
 65

&lt;210&gt; 8600

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8600

Thr Ser Ser Pro Thr Ser Leu Lys Lys Glu Val Ser Met Glu Ile Arg  
 1 5 10 15  
 Ile Gln Ser Ile His Phe Asp Ala Thr Glu Gln Leu Gln Ala Phe Ile  
 20 25 30  
 Gln Lys Lys Val Ser Lys Leu Glu Lys Tyr Tyr Glu Asp Ile Lys Lys  
 35 40 45  
 Val Glu Val Ser Leu Lys Val Val Lys Pro Glu Ala Ala Glu Asn Lys  
 50 55 60  
 Glu Ala Gly Ile Thr Val Leu Val Pro Asn Asn Asp Phe His Ala Ser  
 65 70 75 80  
 Lys Ile Cys Asp Thr Phe Glu Glu Ala Val Asp Leu Cys Val Glu Ala  
 85 90 95  
 Leu Glu Lys Gln Leu Val Lys Tyr Lys Glu Lys Gln Arg Asn Lys  
 100 105 110

&lt;210&gt; 8601

&lt;211&gt; 174

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8601

Asn Arg Val Thr Met Arg Lys Glu Asp Lys Asn Thr Ile Ile Glu Gln  
 1 5 10 15  
 Ile Ala Ala Thr Val Gln Glu Tyr Gly His Phe Tyr Leu Val Asp Thr  
 20 25 30  
 Thr Ala Met Asn Ala Ala Ala Thr Ser Glu Leu Arg Arg Ala Cys Phe  
 35 40 45  
 Lys Ala Asp Ile Lys Leu Met Val Val Lys Asn Thr Leu Leu His Lys  
 50 55 60  
 Ala Leu Glu Ser Ile Glu Gly Asp Phe Ser Pro Leu Tyr Asp Ser Leu  
 65 70 75 80  
 Lys Gly Thr Thr Ala Val Met Phe Cys Asn Val Ala Asn Ala Pro Ala  
 85 90 95  
 Lys Leu Ile Lys Asp Lys Ser Lys Asp Gly Ile Pro Gly Leu Lys Ala  
 100 105 110  
 Ala Tyr Ala Glu Glu Ser Phe Tyr Val Gly Ala Asp Gln Leu Asp Ala  
 115 120 125  
 Leu Val Ala Ile Lys Ser Lys Asn Glu Val Ile Ala Asp Ile Val Ala  
 130 135 140  
 Leu Leu Gln Ser Pro Ala Lys Asn Val Ile Ser Ala Leu Gln Ser Gly



145                      150                      155                      160  
 Gly Asn Thr Leu His Gly Val Leu Lys Thr Leu Gly Glu Arg  
                          165                      170

<210> 8602  
 <211> 196  
 <212> PRT  
 <213> B.fragilis

<400> 8602  
 Leu Ser Pro Tyr Trp Leu Gln Asn Ser Tyr Leu Cys Lys Ser Ala Ala  
 1                      5                      10                      15  
 Glu Phe Glu Ile Ser Ile Lys Gln Gln Ser Met Ala Leu Ile Lys Ser  
                          20                      25                      30  
 Val Arg Gly Phe Thr Pro Glu Phe Gly Glu Asn Cys Phe Leu Ala Asp  
                          35                      40                      45  
 Asn Ala Thr Ile Ile Gly Asp Val Lys Met Gly Gln Asn Cys Ser Ile  
                          50                      55                      60  
 Trp Phe Asn Thr Val Leu Arg Gly Asp Val Asn Ser Ile Arg Met Gly  
 65                      70                      75                      80  
 Asp Gly Val Asn Ile Gln Asp Gly Ser Val Leu His Thr Leu Tyr Glu  
                          85                      90                      95  
 Lys Ser Thr Ile Glu Ile Gly Asn Tyr Val Ser Val Gly His Asn Val  
                          100                      105                      110  
 Thr Ile His Gly Ala Thr Val Lys Asp Tyr Ala Leu Ile Gly Met Gly  
                          115                      120                      125  
 Ser Thr Leu Leu Asp His Ala Val Ile Gly Glu Gly Ala Ile Val Ala  
                          130                      135                      140  
 Ala Gly Ser Leu Val Leu Ser Asn Thr Ile Ile Glu Pro Gly Ser Ile  
 145                      150                      155                      160  
 Trp Gly Gly Val Pro Ala Lys Phe Ile Lys Lys Val Asp Pro Glu Gln  
                          165                      170                      175  
 Ala Lys Glu Leu Asn Gln Lys Ile Ala His Asn Tyr Leu Met Tyr Ser  
                          180                      185                      190  
 Asp Trp Tyr Lys  
                          195

<210> 8603  
 <211> 593  
 <212> PRT  
 <213> B.fragilis

<400> 8603  
 Cys Met Lys Gln Ser Ile Ser Glu Arg Ile His Ala Leu Arg Met Trp  
 1                      5                      10                      15  
 Phe Lys Pro Asn Ile Gln Ala Phe Ile Ile Pro Ser Thr Asp Pro His  
                          20                      25                      30  
 Leu Ser Glu Tyr Val Ala Pro His Trp Lys Ser Arg Glu Trp Ile Ser  
                          35                      40                      45  
 Gly Phe Thr Gly Ser Ala Gly Thr Val Val Ile Thr Glu Lys Lys Ala  
                          50                      55                      60  
 Gly Leu Trp Thr Asp Ser Arg Tyr Phe Leu Gln Ala Ala Glu Gln Leu  
 65                      70                      75                      80  
 Gln Gly Ser Gly Ile Asp Leu Tyr Lys Glu Met Leu Pro Glu Thr Pro  
                          85                      90                      95  
 Ser Ile Thr Lys Phe Leu Ser Asp Glu Leu Gln Pro Gly Glu Ser Val  
                          100                      105                      110  
 Gly Ile Asp Gly Lys Met Phe Ser Val Glu Gln Val Glu Ser Met Gln  
                          115                      120                      125

Ala Glu Leu Ser Ala Lys Asn Ile Gln Ile Val Phe Cys Pro Asp Pro  
 130 135 140  
 Met Asp Glu Leu Trp Glu Asn Arg Pro Pro Met Pro Glu Ser Pro Ala  
 145 150 155 160  
 Phe Val Tyr Asp Ile Lys Tyr Ala Gly Lys Ser Cys Ser Glu Lys Ile  
 165 170 175  
 Ala Ala Ile Arg Thr Glu Leu Lys Lys Lys Ser Ala Glu Ser Val Met  
 180 185 190  
 Leu Ser Ala Leu Asp Glu Ile Ala Trp Thr Leu Asn Leu Arg Gly Asn  
 195 200 205  
 Asp Val His Cys Asn Pro Val Val Val Ser Tyr Leu Leu Ile Thr Glu  
 210 215 220  
 Lys Lys Ala Val Leu Phe Ile Ala Pro Glu Lys Val Thr Glu Glu Val  
 225 230 235 240  
 Arg Asn Tyr Leu Glu Lys Gln Gln Ile Glu Ile Gln Asn Tyr Ser Asp  
 245 250 255  
 Thr Glu Ile Tyr Leu Ser Asp Leu Asn Ser Ser Ser Ile Leu Met Asn  
 260 265 270  
 Pro Ala Lys Thr Asn Tyr Ser Val Phe Ser Ser Val Asn Pro Gln Cys  
 275 280 285  
 Arg Ile Ile Arg Gly Glu Ala Pro Val Ala Leu Leu Lys Ala Ile Arg  
 290 295 300  
 Asn Glu Gln Glu Ile Lys Gly Ile His Ala Ala Met Gln Arg Asp Gly  
 305 310 315 320  
 Val Ala Leu Val Lys Phe Leu Arg Trp Leu Glu Ser Ala Val Pro Ser  
 325 330 335  
 Gly Thr Glu Thr Glu Leu Ser Ile Asp Arg Lys Leu His Ala Phe Arg  
 340 345 350  
 Ala Thr Gln Asp Leu Tyr Val Gly Glu Ser Phe Asp Thr Ile Ala Gly  
 355 360 365  
 Tyr Lys Glu His Gly Ala Ile Val His Tyr Ser Ala Thr Glu Glu Ser  
 370 375 380  
 Asn Ala Thr Leu His Pro Lys Gly Phe Leu Leu Leu Asp Ser Gly Ala  
 385 390 395 400  
 Gln Tyr Leu Asp Gly Thr Thr Asp Ile Thr Arg Thr Ile Ala Leu Gly  
 405 410 415  
 Glu Leu Thr Thr Glu Glu Lys Thr Asp Tyr Thr Leu Val Leu Lys Gly  
 420 425 430  
 His Ile Ala Leu Ala Met Ala Val Phe Pro Ser Gly Thr Arg Gly Ala  
 435 440 445  
 Gln Leu Asp Val Leu Ala Arg Met Pro Leu Trp Ser His Lys Met Asn  
 450 455 460  
 Phe Leu His Gly Thr Gly His Gly Val Gly His Phe Leu Ser Val His  
 465 470 475 480  
 Glu Gly Pro Gln Ser Ile Arg Met Asn Glu Asn Pro Ile Val Leu Gln  
 485 490 495  
 Pro Gly Met Val Thr Ser Asn Glu Pro Gly Val Tyr Lys Gly Gly Ser  
 500 505 510  
 His Gly Ile Arg Thr Glu Asn Leu Thr Leu Val Cys Ser Ala Gly Glu  
 515 520 525  
 Gly Leu Phe Gly Glu Tyr Leu Lys Phe Glu Thr Ile Thr Leu Cys Pro  
 530 535 540  
 Ile Cys Lys Lys Gly Ile Ile Lys Glu Leu Leu Thr Ala Asp Glu Val  
 545 550 555 560  
 Asp Trp Leu Asn Asn Tyr His Gln Gln Val Tyr Glu Lys Leu Ser Pro  
 565 570 575  
 Lys Leu Asn Glu Glu Glu Lys Ala Trp Leu Lys Glu Ala Thr Ala Val  
 580 585 590  
 Ile

<210> 8604  
 <211> 399  
 <212> PRT  
 <213> B.fragilis

<400> 8604

Ile	Thr	Ser	Lys	Ala	Met	Ala	Lys	Glu	Lys	Phe	Glu	Arg	Thr	Lys	Pro
1			5					10						15	
His	Val	Asn	Ile	Gly	Thr	Ile	Gly	His	Val	Asp	His	Gly	Lys	Thr	Thr
		20					25					30			
Leu	Thr	Ala	Ala	Ile	Thr	Thr	Val	Leu	Ala	Lys	Lys	Gly	Leu	Ser	Glu
	35					40					45				
Leu	Arg	Ser	Phe	Asp	Ser	Ile	Asp	Asn	Ala	Pro	Glu	Glu	Lys	Glu	Arg
	50				55					60					
Gly	Ile	Thr	Ile	Asn	Thr	Ser	His	Val	Glu	Tyr	Glu	Thr	Ala	Asn	Arg
65				70					75					80	
His	Tyr	Ala	His	Val	Asp	Cys	Pro	Gly	His	Ala	Asp	Tyr	Val	Lys	Asn
			85					90						95	
Met	Val	Thr	Gly	Ala	Ala	Gln	Met	Asp	Gly	Ala	Ile	Ile	Val	Val	Ala
			100					105					110		
Ala	Thr	Asp	Gly	Pro	Met	Pro	Gln	Thr	Arg	Glu	His	Ile	Leu	Leu	Ala
	115						120					125			
Arg	Gln	Val	Asn	Val	Pro	Lys	Leu	Val	Val	Phe	Met	Asn	Lys	Cys	Asp
	130					135					140				
Met	Val	Glu	Asp	Ala	Glu	Met	Leu	Glu	Leu	Val	Glu	Met	Glu	Met	Arg
145					150					155					160
Glu	Leu	Leu	Ser	Phe	Tyr	Asp	Phe	Asp	Gly	Asp	Asn	Thr	Pro	Ile	Ile
			165						170					175	
Gln	Gly	Ser	Ala	Leu	Gly	Ala	Leu	Asn	Gly	Val	Glu	Lys	Trp	Glu	Asp
		180						185					190		
Lys	Val	Met	Glu	Leu	Met	Glu	Ala	Val	Asp	Thr	Trp	Ile	Pro	Leu	Pro
		195					200					205			
Pro	Arg	Asp	Val	Asp	Lys	Pro	Phe	Leu	Met	Pro	Val	Glu	Asp	Val	Phe
	210					215					220				
Ser	Ile	Thr	Gly	Arg	Gly	Thr	Val	Ala	Thr	Gly	Arg	Ile	Glu	Thr	Gly
225					230					235					240
Val	Ile	His	Val	Gly	Asp	Glu	Ile	Glu	Ile	Leu	Gly	Leu	Gly	Glu	Asp
			245						250					255	
Lys	Lys	Ser	Val	Val	Thr	Gly	Val	Glu	Met	Phe	Arg	Lys	Leu	Leu	Asp
		260						265					270		
Gln	Gly	Glu	Ala	Gly	Asp	Asn	Val	Gly	Leu	Leu	Leu	Arg	Gly	Val	Asp
	275						280					285			
Lys	Asn	Glu	Ile	Lys	Arg	Gly	Met	Val	Leu	Cys	Lys	Pro	Gly	Gln	Ile
	290					295					300				
Lys	Pro	His	Ser	Lys	Phe	Lys	Ala	Glu	Val	Tyr	Ile	Leu	Lys	Lys	Glu
305					310					315					320
Glu	Gly	Gly	Arg	His	Thr	Pro	Phe	His	Asn	Lys	Tyr	Arg	Pro	Gln	Phe
			325						330					335	
Tyr	Leu	Arg	Thr	Met	Asp	Cys	Thr	Gly	Glu	Ile	Thr	Leu	Pro	Glu	Gly
		340						345					350		
Thr	Glu	Met	Val	Met	Pro	Gly	Asp	Asn	Val	Thr	Ile	Thr	Val	Glu	Leu
	355					360						365			
Ile	Tyr	Pro	Val	Ala	Leu	Asn	Ile	Gly	Leu	Arg	Phe	Ala	Ile	Arg	Glu
	370					375					380				
Gly	Gly	Arg	Thr	Val	Gly	Ala	Gly	Gln	Ile	Thr	Glu	Ile	Ile	Asp	
385					390					395					

<210> 8605  
 <211> 151  
 <212> PRT  
 <213> B.fragilis

<400> 8605

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Ile Asn Lys Lys Met Ala Lys Glu Val Ala Gly Leu Ile Lys Leu Gln
1      5      10      15
Ile Lys Gly Gly Ala Ala Asn Pro Ser Pro Pro Val Gly Pro Ala Leu
      20      25      30
Gly Ser Lys Gly Ile Asn Ile Met Glu Phe Cys Lys Gln Phe Asn Ala
      35      40      45
Arg Thr Gln Asp Lys Ala Gly Lys Ile Leu Pro Val Ile Ile Thr Tyr
      50      55      60
Tyr Ala Asp Lys Ser Phe Asp Phe Val Ile Lys Thr Pro Pro Val Ala
65      70      75      80
Ile Gln Leu Leu Glu Val Ala Lys Val Lys Ser Gly Ser Ala Glu Pro
      85      90      95
Asn Arg Lys Lys Val Ala Glu Ile Thr Trp Glu Gln Val Arg Thr Ile
      100     105     110
Ala Gln Asp Lys Met Val Asp Leu Asn Cys Phe Thr Val Glu Ala Ala
      115     120     125
Met Arg Met Val Ala Gly Thr Ala Arg Ser Met Gly Ile Ala Val Lys
      130     135     140
Gly Glu Phe Pro Val Asn Asn
145      150

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<210> 8606  
 <211> 95  
 <212> PRT  
 <213> B.fragilis

<400> 8606

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Ser Arg Ser Leu Arg Asn Ile Ser Thr Pro Val Thr Thr Asp Phe Leu
1      5      10      15
Ser Ser Pro Lys Pro Arg Ile Ser Ile Ser Ser Pro Thr Trp Ile Thr
      20      25      30
Pro Val Ser Ile Arg Pro Val Ala Thr Val Pro Arg Pro Val Ile Glu
      35      40      45
Asn Thr Ser Ser Thr Gly Ile Lys Lys Gly Leu Ser Thr Ser Arg Gly
      50      55      60
Gly Ser Gly Ile Gln Val Ser Thr Ala Ser Ile Ser Ser Ile Thr Leu
65      70      75      80
Ser Ser His Phe Ser Thr Pro Phe Asn Ala Pro Arg Ala Glu Pro
      85      90      95

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<210> 8607  
 <211> 114  
 <212> PRT  
 <213> B.fragilis

<400> 8607

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Asn Tyr Arg Leu Lys Pro Asn Ile Asn Gln Phe Pro Val Val Ile Ser
1      5      10      15
Gly Thr Asp Tyr Val Gln Thr Gly Val Ala Gln Leu Val Glu His Arg
      20      25      30
Ser Pro Lys Pro Gly Val Gly Ser Ser Ser Leu Ser Ser Arg Ala Asn
      35      40      45
Ile Tyr Glu Met Lys Lys Val Val Ala Tyr Ile Lys Glu Ser Tyr Asp

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<210> 8608
<211> 76
<212> PRT
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<210> 8609
<211> 410
<212> PRT
<213> B.fragilis
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<400> 8609															
Gly 1	Ser	Gly	Gly	Met 5	Phe	Tyr	Asp	Leu	Ala 10	Ile	Gly	Ile	Tyr	Asp 15	Leu
Leu	Val	His	Leu 20	Ala	Ala	Pro	Phe	Ser 25	Arg	Lys	Pro	Arg	Lys 30	Met	Met
Lys	Gly	His 35	Trp	Val	Val	Tyr	Asp 40	Leu	Leu	Arg	Gln	Gln 45	Val	Glu	Lys
Asp	Glu 50	Arg	Tyr	Ile	Trp	Phe 55	His	Ala	Ala	Ser	Leu 60	Gly	Glu	Phe	Glu
Gln 65	Gly	Arg	Pro	Leu	Ile 70	Glu	Ser	Ile	Arg	Glu 75	Arg	Tyr	Pro	Asp 80	Tyr
Lys	Ile	Leu	Gln 85	Thr	Phe	Phe	Ser	Pro	Ser 90	Gly	Tyr	Glu	Val	Arg 95	Lys
Asn	Tyr	Arg	Gly 100	Ala	Asp	Ile	Val	Cys	Tyr 105	Leu	Pro	Phe	Asp 110	Lys	Pro
Arg	Asn	Val	Lys 115	Lys	Phe	Leu	Asp 120	Ile	Val	Asn	Pro	Cys	Met 125	Ala	Phe
Phe	Ile	Lys	Tyr 130	Glu	Phe	Trp	Lys 135	Asn	Tyr	Leu	Asp 140	Glu	Leu	His	Lys
Arg 145	Arg	Ile	Pro	Val	Tyr 150	Ser	Val	Ser	Ser	Ile 155	Phe	Arg	Lys	Asp 160	Gln
Ile	Phe	Phe	Lys 165	Trp	Tyr	Gly	Gly	Thr	Tyr 170	Arg	Asn	Val	Leu	Lys 175	Asp
Phe	Asp	His	Leu 180	Phe	Val	Gln	Asn	Glu 185	Ala	Ser	Lys	Arg	Phe 190	Leu	Ala
Lys	Ile	Gly 195	Ile	Thr	Arg	Val	Thr 200	Val	Val	Gly	Asp	Thr 205	Arg	Phe	Asp

Arg	Val	Leu	Gln	Ile	Arg	Glu	Gln	Ala	Lys	Glu	Leu	Pro	Leu	Val	Glu
210						215					220				
Gln	Phe	Lys	Asn	Gly	Ala	Phe	Thr	Phe	Val	Ala	Gly	Ser	Ser	Trp	Gly
225				230						235					240
Pro	Asp	Glu	Asp	Leu	Phe	Ile	Glu	Tyr	Phe	Asn	Ser	His	Pro	Glu	Met
				245					250						255
Lys	Leu	Ile	Ile	Ala	Pro	His	Val	Ile	Asp	Glu	Asn	His	Leu	Val	Glu
			260					265						270	
Ile	Ile	Gly	Lys	Leu	Lys	Arg	Pro	Ser	Val	Arg	Tyr	Thr	Arg	Ala	Asp
		275					280					285			
Glu	Lys	Asn	Val	Arg	Lys	Ala	Asp	Cys	Leu	Ile	Ile	Asp	Cys	Phe	Gly
		290				295					300				
Leu	Leu	Ser	Ser	Ile	Tyr	Arg	Tyr	Gly	Glu	Ile	Ala	Tyr	Ile	Gly	Gly
305				310						315					320
Gly	Phe	Gly	Val	Gly	Ile	His	Asn	Thr	Leu	Glu	Ala	Ala	Val	Tyr	Gly
				325					330						335
Ile	Pro	Val	Ile	Phe	Gly	Pro	Lys	Tyr	Gln	Lys	Phe	Met	Glu	Ala	Met
			340					345					350		
Gln	Leu	Ile	Glu	Ala	Gly	Gly	Ala	Tyr	Ser	Ile	Lys	Asp	Tyr	Asn	Glu
		355					360					365			
Leu	Lys	Ile	Leu	Leu	Asp	Arg	Leu	Leu	Thr	Asp	Glu	Ala	Phe	Leu	Lys
		370				375					380				
Lys	Thr	Gly	Thr	Asn	Ala	Gly	Asn	Tyr	Val	Ile	Gly	Asn	Ser	Gly	Ala
385				390						395					400
Thr	Glu	Lys	Val	Leu	His	Met	Ile	Asn	Phe						
				405					410						

&lt;210&gt; 8610

&lt;211&gt; 308

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8610

Ile	Leu	Phe	Ile	His	Ser	Leu	Gln	Asn	Tyr	Arg	Cys	Ser	Asp	Ile	Met
1				5					10					15	
Leu	Thr	Asp	Ser	Phe	Leu	Asp	Tyr	Leu	Arg	Tyr	Glu	Arg	Asn	Tyr	Ser
			20					25					30		
Glu	Lys	Thr	Val	Leu	Ala	Tyr	Gly	Glu	Asp	Ile	Ser	Gln	Leu	Arg	Glu
		35					40					45			
Phe	Ala	Gln	Glu	Arg	Met	Glu	Lys	Phe	Asp	Pro	Ala	Glu	Val	Lys	Pro
		50				55				60					
Glu	Leu	Val	Arg	Glu	Trp	Ile	Val	Ser	Leu	Met	Asp	Gln	Gly	Tyr	Thr
65				70					75					80	
Ser	Thr	Ser	Val	Asn	Arg	Lys	Leu	Ser	Ser	Leu	Arg	Ser	Phe	Tyr	Lys
				85				90						95	
Tyr	Leu	Leu	Arg	Gln	Gly	Glu	Val	Ser	Val	Asp	Pro	Leu	Arg	Lys	Ile
			100					105					110		
Thr	Gly	Pro	Lys	Asn	Lys	Lys	Pro	Leu	Pro	Ser	Phe	Leu	Lys	Glu	Ser
		115					120					125			
Glu	Met	Asn	Lys	Leu	Leu	Asp	Asp	Thr	Asp	Phe	Gly	Glu	Gly	Phe	Lys
		130				135					140				
Gly	Cys	Arg	Asp	Arg	Leu	Ile	Ile	Glu	Met	Phe	Tyr	Ala	Thr	Gly	Met
145				150						155					160
Arg	Leu	Ser	Glu	Leu	Ile	Gly	Leu	Asp	Asp	Lys	Asp	Val	Asp	Phe	Ser
				165				170						175	
Ala	Ser	Leu	Leu	Lys	Val	Thr	Gly	Lys	Arg	Asn	Lys	Gln	Arg	Leu	Ile
			180					185					190		
Pro	Phe	Gly	Asp	Glu	Leu	Lys	Glu	Thr	Met	Leu	Glu	Tyr	Val	Asp	Ile
		195					200					205			

Arg Asn Glu Met Ile Ser Gly Arg Ser Asp Ala Phe Phe Val Arg Glu  
 210 215 220  
 Asn Gly Glu Arg Leu Tyr Lys Asn Leu Val Tyr Asn Leu Val Lys Arg  
 225 230 235 240  
 Asn Leu Ser Lys Val Val Thr Leu Lys Lys Arg Ser Pro His Val Leu  
 245 250 255  
 Arg His Thr Phe Ala Thr Thr Met Leu Asn Asn Asp Ala Glu Leu Gly  
 260 265 270  
 Ala Val Lys Glu Leu Leu Gly His Ser Ser Leu Ala Thr Thr Glu Ile  
 275 280 285  
 Tyr Thr His Thr Thr Phe Glu Leu Lys Lys Val Tyr Lys Gln Ala  
 290 295 300  
 His Pro Arg Ala  
 305

<210> 8611  
 <211> 190  
 <212> PRT  
 <213> B.fragilis

<400> 8611

Phe Ile His Ile Lys Lys Arg Gly Ile Thr Met Ser Glu Ile Glu Lys  
 1 5 10 15  
 Lys Trp Tyr Val Leu Arg Ala Ile Ser Gly Lys Glu Ala Lys Val Lys  
 20 25 30  
 Glu Tyr Leu Glu Ala Asp Ile Lys Asn Ser Asp Leu Gly Glu Tyr Val  
 35 40 45  
 Ser Gln Val Leu Ile Pro Thr Glu Lys Val Tyr Gln Val Arg Asn Gly  
 50 55 60  
 Lys Lys Ile Val Lys Glu Arg Ser Tyr Leu Pro Gly Tyr Val Leu Val  
 65 70 75 80  
 Glu Ala Ala Leu Val Gly Glu Val Ser His His Leu Arg Asn Thr Pro  
 85 90 95  
 Asn Val Ile Gly Phe Leu Gly Gly Ser Asp Lys Pro Val Pro Leu Arg  
 100 105 110  
 Gln Ser Glu Val Asn Arg Ile Leu Gly Thr Val Asp Glu Leu Gln Glu  
 115 120 125  
 Thr Gly Glu Asp Leu Asn Val Pro Tyr Ile Val Gly Glu Thr Val Lys  
 130 135 140  
 Val Thr Phe Gly Pro Phe Ser Gly Phe Ser Gly Ile Ile Glu Glu Val  
 145 150 155 160  
 Asn Ser Glu Lys Lys Lys Leu Lys Val Met Val Lys Ile Phe Gly Arg  
 165 170 175  
 Lys Thr Pro Leu Glu Leu Gly Phe Met Gln Val Glu Lys Glu  
 180 185 190

<210> 8612  
 <211> 180  
 <212> PRT  
 <213> B.fragilis

<400> 8612

Thr Ser Ile Val Met Gly Lys Leu Thr Lys Asn Gln Lys Leu Ala Ala  
 1 5 10 15  
 Gly Lys Ile Glu Ala Gly Lys Ala Tyr Ser Leu Lys Glu Ala Ala Ser  
 20 25 30  
 Leu Val Lys Glu Ile Thr Phe Thr Lys Phe Asp Ala Ser Leu Asp Ile  
 35 40 45  
 Asp Val Arg Leu Gly Val Asp Pro Arg Lys Ala Asn Gln Met Val Arg

50                      55                      60  
 Gly Val Val Ser Leu Pro His Gly Thr Gly Lys Gln Val Arg Val Leu  
 65                      70                      75                      80  
 Val Leu Cys Thr Pro Asp Ala Glu Ala Ala Lys Glu Ala Gly Ala  
 85                      90                      95  
 Asp Tyr Val Gly Leu Asp Glu Tyr Ile Glu Lys Ile Lys Gly Gly Trp  
 100                      105                      110  
 Thr Asp Ile Asp Val Ile Ile Thr Met Pro Ser Ile Met Gly Lys Ile  
 115                      120                      125  
 Gly Ala Leu Gly Arg Val Leu Gly Pro Arg Gly Leu Met Pro Asn Pro  
 130                      135                      140  
 Lys Ser Gly Thr Val Thr Met Asp Val Ala Lys Ala Val Arg Glu Val  
 145                      150                      155                      160  
 Lys Gln Gly Lys Met Val Tyr Gln Ser Ala Ser Lys Arg Tyr Cys Ser  
 165                      170                      175  
 Tyr Phe Asn Trp  
 180

<210> 8613  
 <211> 89  
 <212> PRT  
 <213> B.fragilis

<400> 8613  
 Ile Lys Lys Val Cys Val Ile Leu Arg Arg Asn Leu Thr Ala Glu Ile  
 1                      5                      10                      15  
 Leu Asn His Asn Ile Phe Asn Asn Asn Lys Met Ile Val Val Pro Val  
 20                      25                      30  
 Lys Glu Gly Glu Asn Ile Glu Lys Ala Leu Lys Lys Phe Lys Arg Lys  
 35                      40                      45  
 Phe Glu Lys Thr Gly Ile Val Lys Glu Leu Arg Ser Arg Gln Gln Phe  
 50                      55                      60  
 Asp Lys Pro Ser Val Thr Lys Arg Leu Lys Lys Glu Arg Ala Val Tyr  
 65                      70                      75                      80  
 Val Gln Lys Leu Gln Val Glu Asp  
 85

<210> 8614  
 <211> 138  
 <212> PRT  
 <213> B.fragilis

<400> 8614  
 His Ile Leu Phe Ser Lys Leu Asn Ile Lys Ile Ile Gln Lys Met Ala  
 1                      5                      10                      15  
 Asp Leu Lys Ala Phe Ala Glu Gln Leu Val Asn Leu Thr Val Lys Glu  
 20                      25                      30  
 Val Asn Glu Leu Ala Thr Ile Leu Lys Glu Glu Tyr Gly Ile Glu Pro  
 35                      40                      45  
 Ala Ala Ala Ala Val Ala Val Ala Ala Gly Pro Ala Ala Gly Ala Ala  
 50                      55                      60  
 Ala Ala Glu Glu Lys Ser Ser Phe Asp Val Val Leu Lys Ser Ala Gly  
 65                      70                      75                      80  
 Ala Ala Lys Leu Gln Val Val Lys Ala Val Lys Glu Ala Cys Gly Leu  
 85                      90                      95  
 Gly Leu Lys Glu Ala Lys Asp Met Val Asp Gly Ala Pro Ser Val Val  
 100                      105                      110  
 Lys Glu Gly Leu Ala Lys Asp Glu Ala Glu Ser Leu Lys Lys Thr Leu  
 115                      120                      125



Glu Glu Ala Gly Ala Glu Val Glu Leu Lys  
 130 135

<210> 8615  
 <211> 957  
 <212> PRT  
 <213> B.fragilis

<400> 8615

Gln Met Ser Ser Asn Thr Val Asn Gln Arg Val Asn Phe Ala Ser Thr  
 1 5 10 15  
 Lys Asn Pro Leu Glu Tyr Pro Asp Phe Leu Glu Val Gln Leu Lys Ser  
 20 25 30  
 Phe Gln Asp Phe Leu Gln Leu Asp Thr Pro Pro Glu Lys Arg Lys Lys  
 35 40 45  
 Glu Gly Leu Tyr Lys Val Phe Ala Glu Asn Phe Pro Ile Ala Asp Thr  
 50 55 60  
 Arg Asn Asn Phe Val Leu Glu Phe Leu Asp Tyr Tyr Ile Asp Pro Pro  
 65 70 75 80  
 Arg Tyr Thr Ile Asp Asp Cys Ile Glu Arg Gly Leu Thr Tyr Ser Val  
 85 90 95  
 Pro Leu Lys Ala Lys Leu Lys Leu Tyr Cys Thr Asp Pro Asp His Glu  
 100 105 110  
 Asp Phe Asp Thr Val Ile Gln Asp Val Phe Leu Gly Pro Ile Pro Tyr  
 115 120 125  
 Met Thr Asp Lys Ala Thr Phe Val Ile Asn Gly Ala Glu Arg Val Val  
 130 135 140  
 Val Ser Gln Leu His Arg Ser Pro Gly Val Phe Phe Gly Gln Ser Val  
 145 150 155 160  
 His Ala Asn Gly Thr Lys Leu Tyr Ser Ala Arg Ile Ile Pro Phe Lys  
 165 170 175  
 Gly Ser Trp Ile Glu Phe Ala Thr Asp Ile Asn Asn Val Met Tyr Ala  
 180 185 190  
 Tyr Ile Asp Arg Lys Lys Lys Leu Pro Val Thr Thr Leu Leu Arg Ala  
 195 200 205  
 Ile Gly Phe Glu Asn Asp Lys Asp Ile Leu Glu Ile Phe Asn Leu Ala  
 210 215 220  
 Glu Asp Val Lys Val Asn Lys Thr Asn Leu Lys Lys Val Val Gly Arg  
 225 230 235 240  
 Lys Leu Ala Ala Arg Val Leu Lys Thr Trp Ile Glu Asp Phe Val Asp  
 245 250 255  
 Glu Asp Thr Gly Glu Val Val Ser Ile Glu Arg Asn Glu Val Ile Ile  
 260 265 270  
 Asp Arg Glu Thr Val Ile Glu Pro Glu His Ile Asp Glu Ile Ile Asp  
 275 280 285  
 Ser Gly Val Gln Asn Ile Leu Ile His Lys Glu Glu Pro Asn Gln Ser  
 290 295 300  
 Asp Tyr Ser Ile Ile Tyr Asn Thr Leu Gln Lys Asp Pro Ser Asn Ser  
 305 310 315 320  
 Glu Lys Glu Ala Val Leu Tyr Ile Tyr Arg Gln Leu Arg Asn Ala Asp  
 325 330 335  
 Pro Ala Asp Asp Ala Ser Ala Arg Glu Val Ile Asn Asn Leu Phe Phe  
 340 345 350  
 Ser Glu Lys Arg Tyr Asp Leu Gly Asp Val Gly Arg Tyr Arg Ile Asn  
 355 360 365  
 Lys Lys Leu Asn Leu Thr Thr Asp Met Asp Val Arg Val Leu Thr Lys  
 370 375 380  
 Glu Asp Ile Ile Glu Ile Ile Lys Tyr Leu Ile Glu Leu Ile Asn Ser  
 385 390 395 400

130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400

Lys Ala Asp Val Asp Asp Ile Asp His Leu Ser Asn Arg Arg Val Arg  
 405 410 415  
 Thr Val Gly Glu Gln Leu Ser Asn Gln Phe Ala Val Gly Leu Ala Arg  
 420 425 430  
 Met Ser Arg Thr Ile Arg Glu Arg Met Asn Val Arg Asp Asn Glu Val  
 435 440 445  
 Phe Thr Pro Ile Asp Leu Ile Asn Ala Lys Thr Ile Ser Ser Val Ile  
 450 455 460  
 Asn Ser Phe Phe Gly Thr Asn Ala Leu Ser Gln Phe Met Asp Gln Thr  
 465 470 475 480  
 Asn Pro Leu Ala Glu Ile Thr His Lys Arg Arg Met Ser Ala Leu Gly  
 485 490 495  
 Pro Gly Gly Leu Ser Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val  
 500 505 510  
 His Tyr Thr His Tyr Gly Arg Leu Cys Pro Ile Glu Thr Pro Glu Gly  
 515 520 525  
 Pro Asn Ile Gly Leu Ile Ser Ser Leu Cys Val Phe Ala Lys Ile Asn  
 530 535 540  
 Asp Leu Gly Phe Ile Glu Thr Pro Tyr Arg Lys Val Asp Asn Gly Lys  
 545 550 555 560  
 Val Asp Leu Ser Glu Asn Gly Leu Val Tyr Leu Thr Ala Glu Glu Glu  
 565 570 575  
 Glu Ala Lys Ile Ile Ala Gln Gly Asn Ala Pro Leu Asn Asp Asp Gly  
 580 585 590  
 Thr Phe Ile Arg Asn Lys Val Lys Ser Arg Gln Asp Ala Asp Tyr Pro  
 595 600 605  
 Val Val Glu Pro Ser Glu Val Glu Leu Met Asp Val Ala Pro Gln Gln  
 610 615 620  
 Ile Ala Ser Ile Ala Ala Ser Leu Ile Pro Phe Leu Glu His Asp Asp  
 625 630 635 640  
 Ala Asn Arg Ala Leu Met Gly Ser Asn Met Met Arg Gln Ala Val Pro  
 645 650 655  
 Leu Leu Arg Ser Glu Ala Pro Ile Val Gly Thr Gly Ile Glu Arg Gln  
 660 665 670  
 Leu Val Arg Asp Ser Arg Thr Gln Ile Ala Ala Glu Gly Asp Gly Val  
 675 680 685  
 Ile Asp Phe Val Asp Ala Thr Thr Ile Arg Ile Leu Tyr Asp Arg Thr  
 690 695 700  
 Glu Asp Glu Glu Phe Val Ser Phe Glu Pro Ala Leu Lys Glu Tyr Arg  
 705 710 715 720  
 Ile Pro Lys Phe Arg Lys Thr Asn Gln Asn Met Thr Ile Asp Leu Arg  
 725 730 735  
 Pro Thr Cys Asn Lys Gly Asp Arg Val Thr Lys Gly Gln Ile Leu Thr  
 740 745 750  
 Glu Gly Tyr Ser Thr Glu Asn Gly Glu Leu Ala Leu Gly Lys Asn Leu  
 755 760 765  
 Leu Val Ala Tyr Met Pro Trp Lys Gly Tyr Asn Tyr Glu Asp Ala Ile  
 770 775 780  
 Val Leu Asn Glu Arg Val Val Arg Glu Asp Leu Leu Thr Ser Val His  
 785 790 795 800  
 Val Glu Glu Tyr Ser Leu Glu Val Arg Glu Thr Lys Arg Gly Met Glu  
 805 810 815  
 Glu Leu Thr Ser Asp Ile Pro Asn Val Ser Glu Glu Ala Thr Lys Asp  
 820 825 830  
 Leu Asp Glu Asn Gly Ile Val Arg Val Gly Ala Arg Ile Gln Pro Gly  
 835 840 845  
 Asp Ile Leu Ile Gly Lys Ile Thr Pro Lys Gly Glu Ser Asp Pro Ser  
 850 855 860  
 Pro Glu Glu Lys Leu Leu Arg Ala Ile Phe Gly Asp Lys Ala Gly Asp

865		870		875		880									
Val	Lys	Asp	Ala	Ser	Leu	Lys	Ala	Ser	Pro	Ser	Leu	Lys	Gly	Val	Ile
		885		890		895									
Ile	Asp	Lys	Lys	Leu	Phe	Ser	Arg	Val	Ile	Lys	Asn	Arg	Ser	Ser	Lys
		900		905									910		
Leu	Ala	Asp	Lys	Ala	Leu	Leu	Pro	Lys	Ile	Asp	Asp	Glu	Phe	Glu	Ser
		915		920								925			
Lys	Val	Ala	Asp	Leu	Lys	Arg	Ile	Leu	Val	Lys	Lys	Leu	Ser	Gly	His
		930		935							940				
His	Arg	Gly	Ser	Gln	Glu	Pro	Gly	Ser	Gln	Trp	Ala	Gly			
945				950						955					

<210> 8616  
 <211> 595  
 <212> PRT  
 <213> B.fragilis

<400> 8616															
Lys	Met	Lys	Thr	Ile	Asn	Lys	Leu	Phe	Lys	Gly	Ile	Phe	Phe	Cys	Thr
1				5				10						15	
Leu	Val	Ser	Val	Ser	Val	Ser	Ser	Cys	Asp	Leu	Glu	Val	Glu	Pro	Pro
			20					25					30		
Ala	Asn	Ile	Ala	Ala	Glu	Thr	Tyr	Trp	Thr	Ser	Glu	Lys	Asp	Ala	Trp
			35				40					45			
Tyr	Asn	Leu	Asn	Ser	Ile	Tyr	Ser	Ala	Ala	Ile	Pro	Gly	Ile	Gly	Ile
		50			55						60				
Tyr	Gly	Asp	Ala	Tyr	Ser	Asp	Asp	Val	Tyr	Cys	Gln	Tyr	Ala	His	Glu
65				70						75					80
Ser	Asn	Ala	Lys	Ile	Phe	Gln	Gln	Asp	Gly	Phe	Ser	Pro	Leu	Tyr	Asp
			85					90						95	
Glu	Gly	Trp	Asn	Phe	Glu	Thr	Ile	Arg	Lys	Glu	Asn	Leu	Phe	Leu	Gln
			100					105					110		
Lys	Val	Gly	Asn	Cys	Glu	Met	Asp	Glu	Ser	Leu	Arg	Glu	Arg	Phe	Lys
		115					120					125			
Ala	Glu	Val	Arg	Ala	Met	Arg	Ala	Trp	Thr	Tyr	Leu	Gly	Met	Thr	Met
		130				135					140				
Thr	Phe	Gly	Lys	Val	Pro	Leu	Ile	Thr	Glu	Val	Leu	Asp	Tyr	Asn	Ser
145				150						155					160
Pro	Asn	Ile	Pro	Arg	Asp	Glu	Val	Ser	Val	Ile	Arg	Asp	Phe	Ile	Met
			165					170						175	
Lys	Glu	Leu	Thr	Glu	Ala	Ala	Ala	Ile	Leu	Pro	Glu	Lys	Tyr	Ala	Gly
		180						185					190		
Gly	Tyr	Pro	Asn	Glu	Lys	Gly	Arg	Ile	Thr	Lys	Tyr	Ala	Cys	Leu	Ser
		195					200					205			
Leu	Lys	Ala	Arg	Ala	Ala	Leu	Tyr	Phe	Gly	Asp	Tyr	Ala	Leu	Ala	Glu
		210				215					220				
Ser	Thr	Ala	Lys	Glu	Val	Met	Asp	Lys	Gly	Gly	Phe	Ser	Leu	Phe	Lys
225				230						235					240
Ile	Ser	Ser	Leu	Ser	Asp	Ala	Gln	Lys	Lys	Glu	Ala	Glu	Glu	Met	Ser
			245					250						255	
Leu	Tyr	Ile	Asp	Phe	Ala	Glu	Lys	Gly	Ile	Asp	Lys	Asp	Glu	Phe	Val
		260						265					270		
Lys	Gly	Met	Phe	Asn	Tyr	Glu	Ala	Leu	Trp	His	Thr	Glu	Asn	Ala	Asn
		275					280					285			
Pro	Asp	Asn	Pro	Glu	Tyr	Ile	Met	Thr	Arg	Gln	Tyr	Ala	Ala	Ser	Ser
		290				295					300				
Trp	Asp	Tyr	Gln	Asp	Met	Thr	Arg	Tyr	Thr	Ser	Met	Arg	Pro	Asn	Gln
305				310						315					320
Leu	Gly	Gly	Trp	Ser	Ser	Val	Thr	Pro	Thr	Gln	Asn	Leu	Val	Asp	Ala

325 330 335  
 Tyr Trp Gly Val Asp Gly His Ser Val Pro Gln Leu Pro Thr Pro Glu  
 340 345 350  
 Glu Arg Ala Lys Ala Tyr Asn Gln Ile Lys Ala Asp Leu Asp Ala Tyr  
 355 360 365  
 Gln Lys Pro Glu Gly Glu Ala Lys Phe Ile Ala Phe Cys Gln Glu Lys  
 370 375 380  
 Ile Lys Asn Gly Thr Leu Lys Asp Tyr Lys Tyr Ile Gln Glu Phe Arg  
 385 390 395 400  
 Asn Arg Asp Ser Arg Met Tyr Val Ser Ile Leu Met Pro Phe Lys Ser  
 405 410 415  
 Trp Tyr Glu Ser Asn Tyr Gly Asp Lys Phe Val Tyr Glu Trp Ile Lys  
 420 425 430  
 Asn Gly Asn Asn Glu Ser Lys Thr Gly Phe Asn Phe Arg Lys Met Leu  
 435 440 445  
 Ser Leu Glu Asn Asp Ala Asn Gly Asp Gly Gln Ala Thr Gly Asp Tyr  
 450 455 460  
 Pro Cys Ile Arg Tyr Ala Glu Ile Leu Leu Ile Tyr Ala Glu Ala His  
 465 470 475 480  
 Thr Gln Thr Thr Gly Tyr Asp Ala Ala Thr Glu Ala Ala Leu Asn Gln  
 485 490 495  
 Leu Arg Asp Arg Cys Gly Met Pro Asp Val Pro Ser Gly Leu Ser Lys  
 500 505 510  
 Glu Glu Gly Leu Lys Leu Ile Gln Asn Glu Arg Arg Ile Glu Leu Ala  
 515 520 525  
 Gly Glu Gly Phe Arg Gly Asp Asp Met Thr Arg Tyr Ser Asp Asp Tyr  
 530 535 540  
 Trp Lys Glu His Met Asn Asn Val Pro Ile Met Thr Pro Asp Gly Asp  
 545 550 555 560  
 Thr Glu Leu Thr Met Lys Trp Ser Ser Arg Met Arg Leu Lys Pro Ile  
 565 570 575  
 Pro Gln Thr Ala Ile Asp Leu Asn Pro Leu Leu Ala Gly Asp Gln Asn  
 580 585 590  
 Pro Gly Tyr  
 595

&lt;210&gt; 8617

&lt;211&gt; 77

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8617

Arg Leu Lys Lys Gly Val Ala Val Asn Arg Ile Ala Ile Lys Ala Gln  
 1 5 10 15  
 Val Leu Thr Gly Gly Arg Gly Lys Ala Gly Gly Val Lys Leu Ala Asn  
 20 25 30  
 Asn Asp Arg Asp Val Tyr Gln Tyr Ala Gln Thr Ile Leu Glu Met Thr  
 35 40 45  
 Ile Lys Gly Tyr Pro Val Thr Lys Asn Phe Leu Asn Glu Ala Gly Asn  
 50 55 60  
 Ile Gly Ser Arg Ile Leu His Gln Phe Tyr Asp Arg Pro  
 65 70 75

&lt;210&gt; 8618

&lt;211&gt; 668

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8618

Arg Gly Thr Arg Ile Asp Cys Leu Arg Tyr Ser Ser Pro Arg Gly Glu  
 1 5 10 15  
 Asp Ser Thr Ser Asp Asn Asp Lys Gly Gly Val Val Tyr Thr His Leu  
 20 25 30  
 Leu Thr Ile Pro Ser Thr Tyr Val Ala Arg Gln Ser Asn Gly Glu Trp  
 35 40 45  
 Gly Ser Tyr Glu Gly Gly Lys Pro Ala Ala Thr Val Asn Met Glu Arg  
 50 55 60  
 Asn Pro Leu Arg Arg Leu Glu Glu Gly Gly Trp Ser Asn Ser Lys Thr  
 65 70 75 80  
 Gln Asn Thr Leu Ile Asn Leu Ala Leu Asp Ile Lys Pro Val Lys Gly  
 85 90 95  
 Leu Val Leu Thr Gly Glu Met Ile Tyr Lys Ala Trp Asp Tyr Lys Ser  
 100 105 110  
 Lys Thr Tyr Thr Ala Asn Lys Ser Lys Ile Lys Asp Phe Gln Thr Gly  
 115 120 125  
 Thr Glu Leu Asn Gly Thr Asp Val Thr Asn Ser Lys Met Glu Tyr Ser  
 130 135 140  
 Trp Glu Glu Asn Ser Arg Leu Thr Tyr Asn Ala Leu Ala Asn Tyr Val  
 145 150 155 160  
 Trp Ser Asn Glu Lys His Asn Val Asn Val Leu Ala Gly Val Ser Tyr  
 165 170 175  
 Glu His Tyr Lys Tyr Gln Lys Gln Lys Ser Tyr Arg Leu Lys Phe Pro  
 180 185 190  
 Thr Asn Gly Met Thr Asp Met Asn Gly Gly Ser Ser Ala Pro Asp Asp  
 195 200 205  
 Thr Tyr Ala Glu Gly Gly Ser Asn Glu Asp Lys Leu Met Ser Tyr Phe  
 210 215 220  
 Gly Arg Val Asn Tyr Ser Phe Met Asp Arg Tyr Leu Leu Glu Ala Asn  
 225 230 235 240  
 Ile Arg Ala Asp Ala Ser Phe Arg Phe His Lys Asp Asn Arg Trp Gly  
 245 250 255  
 Val Phe Pro Ser Phe Ser Ala Gly Trp Arg Ile Ser Gln Glu Gly Phe  
 260 265 270  
 Met Gln Asp Ile Asn Trp Ile Asn Asn Leu Lys Leu Arg Ala Ser Trp  
 275 280 285  
 Gly Gln Leu Gly Asn Ile Asn Asp Val Gly Gln Tyr Asp Tyr Phe Ser  
 290 295 300  
 Ser Tyr Gln Gln Gly Gly Asn Tyr Asn Phe Glu Asp Ala Ile Val Ser  
 305 310 315 320  
 Gly Ile Val Glu Ser Lys Pro Ala Asn Pro Thr Leu Gly Trp Glu Thr  
 325 330 335  
 Val Thr Ile Thr Asp Ile Gly Val Asp Phe Asp Ile Phe Asn Gly Leu  
 340 345 350  
 Leu Asn Phe Thr Ala Asp Tyr Tyr Asn Lys Lys Thr Asp Asp Ile Leu  
 355 360 365  
 Leu Ala Tyr Pro Ser Pro Lys Glu Ile Gly Ile Gly Ser Asp Phe Lys  
 370 375 380  
 Val Ser Gln Asn Ile Gly Thr Val Ser Asn Lys Gly Leu Glu Leu Ser  
 385 390 395 400  
 Ile Thr His Asn Lys Thr Leu Gly Asp Phe Ala Tyr Thr Val Gly Phe  
 405 410 415  
 Asn Met Ser Lys Asn Trp Asn Lys Val Thr Asn Leu Gly Ala Asn Asp  
 420 425 430  
 Pro Ile Ile Glu Ser Pro Trp Ile Lys Lys Val Gly Tyr Ala Ile Gly  
 435 440 445  
 Thr Phe Tyr Gly Tyr Arg Ser Asp Gly Leu Leu Thr Gln Glu Asp Ile  
 450 455 460  
 Asp Thr Gly Asn Tyr Ile Thr Asp Gly Leu Val Pro Gln Ala Gly Asp

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 4800

465 470 475 480  
 Ile Lys Tyr Val Asp Leu Asp Gly Asp Gly Lys Leu Thr Asp Lys Asp  
 485 490 495  
 Arg Thr Tyr Ile Gly Cys Asp Val Pro Asp Ile Thr Tyr Gly Val Asn  
 500 505 510  
 Leu Asn Leu Arg Tyr Lys Gly Phe Glu Leu Ser Met Phe Gly Gln Gly  
 515 520 525  
 Val Thr Gly Thr Lys Val Asn Phe Ser Met Glu Asn Ala Trp Ala Phe  
 530 535 540  
 Ser Asp Tyr Ala Ser Pro Arg Lys Tyr His Leu Lys Arg Trp Thr Val  
 545 550 555 560  
 Asp Asn Pro Asn Pro Asn Ala Ala Tyr Pro Arg Ile Tyr Pro Arg Thr  
 565 570 575  
 Ser Lys His Ser Thr Tyr Asn Gln Tyr Phe Ser Asp Tyr Trp Leu Leu  
 580 585 590  
 Asn Ala Asp Tyr Phe Arg Ile Lys Asn Ile Thr Phe Gly Tyr Ser Phe  
 595 600 605  
 Gln Lys Pro Val Leu Gln Lys Leu Ser Leu Glu Ala Leu Lys Leu Tyr  
 610 615 620  
 Val Ala Ala Glu Asn Pro Phe Thr Ile Arg Ala Asp His Arg Met Glu  
 625 630 635 640  
 Asp Phe Asp Pro Glu Thr Ala Ser Gly Arg Gly Val Asn Thr Arg Gly  
 645 650 655  
 Thr Ser Ser Ile Ala Phe Gly Val Asn Leu Thr Phe  
 660 665

<210> 8619  
 <211> 405  
 <212> PRT  
 <213> B.fragilis

<400> 8619

Val Lys His Asn Leu Lys Thr Met Lys Lys Ser Ile Leu Ile Ala Val  
 1 5 10 15  
 Leu Thr Ala Ser Ile Ala Thr Ser Ala Phe Ala Gln Trp Lys Pro Ala  
 20 25 30  
 Gly Asp Lys Ile Lys Thr Lys Trp Ala Glu Gln Val Asn Pro Glu Asn  
 35 40 45  
 Val Leu Pro Glu Tyr Pro Arg Pro Val Met Glu Arg Gly Glu Trp Lys  
 50 55 60  
 Asn Leu Asn Gly Leu Trp Asn Tyr Ala Ile Thr Glu Lys Gly Ala Ala  
 65 70 75 80  
 Pro Ser Ala Tyr Glu Gly Gln Ile Leu Val Pro Phe Ala Ile Glu Ser  
 85 90 95  
 Ser Leu Ser Gly Val Gly Lys Lys Val Gly Pro Asp Lys Glu Leu Trp  
 100 105 110  
 Tyr Gln Arg Thr Phe Thr Val Pro Ala Ser Trp Lys Gly Lys Lys Val  
 115 120 125  
 Met Leu Asn Phe Gly Ala Val Asp Trp Lys Ala Asp Ile Trp Val Asn  
 130 135 140  
 Asp Ile Lys Val Gly Gln His Thr Gly Gly Phe Thr Pro Phe Ser Leu  
 145 150 155 160  
 Asp Ile Thr Ala Ala Leu Ala Thr Lys Gly Asp Asn Lys Leu Val Val  
 165 170 175  
 Lys Val Trp Asp Pro Thr Asp Arg Gly Pro Gln Pro Arg Gly Lys Gln  
 180 185 190  
 Val Asn Arg Pro Glu Gly Ile Trp Tyr Thr Ala Val Thr Gly Ile Trp  
 195 200 205  
 Gln Thr Val Trp Met Glu Pro Val Ala Glu Arg His Ile Thr Asn Val

210		215		220
Arg Thr Thr Ser Asp Ile Asp Arg Lys Lys Leu Thr Val Asp Val Thr				
225		230		235
Thr Ser Thr Ser Cys Pro Ser Glu Val Val Glu Val Lys Val Phe Asp				240
		245		250
Gly Lys Gln Leu Val Ala Thr Gly Lys Gly Leu Asn Gly Gln Thr Ile				255
		260		265
Asp Ile Gln Met Pro Ala Asp Ala Lys Leu Trp Ser Pro Ala Ser Pro				270
		275		280
Thr Leu Tyr Ser Met Gln Ile Ala Leu Leu Ser Asn Gly Lys Val Thr				285
		290		295
Asp Lys Val Asp Ser Tyr Thr Ala Met Arg Lys Tyr Ser Thr Arg Arg				300
305		310		315
Asp Lys Asp Gly Ile Val Arg Leu Gln Leu Asn Asn Glu Asp Val Phe				320
		325		330
Gln Phe Arg Ser Ser Arg Ser Lys Met Val Ala Arg Arg Thr Val Tyr				335
		340		345
Ser Phe Asp Arg Arg Arg Gly Gly Tyr Asp Ile Gln Lys Thr Lys Asp				350
		355		360
Phe Gly Phe Asn Met Ile Arg Lys His Val Lys Gly Glu Pro Ala Arg				365
370		375		380
Trp Tyr Ser His Cys Asp Lys Leu Gly Ile Ile Val Trp Gln Asp Leu				385
385		390		395
Pro Lys Trp Glu Pro				400
		405		

&lt;210&gt; 8620

&lt;211&gt; 691

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (218)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 8620

Lys His Pro Asn Met Lys Lys Met Lys Ser Leu Lys Gly Gly Leu Ala				
1	5	10	15	
Gly Ile Leu Phe Thr Ala Gly Leu Leu Ala Ala Ser Cys Thr Ser Asp				
	20	25	30	
Gln Ser Ser Ser Ala Val Thr Ile Val Asn Arg Pro Asp Cys Thr Gln				
	35	40	45	
Thr Asn Val Asn Tyr Val Gly Asn Arg Leu Pro Leu Lys Pro Met Asn				
50	55	60		
Phe Ile Lys Leu Pro Val Gly Ser Ile Gln Pro Glu Gly Trp Leu Lys				
65	70	75	80	
Lys Tyr Leu Glu Leu Gln Lys Asp Gly Leu Thr Gly His Leu Asn Glu				
	85	90	95	
Ile Ser Ala Trp Leu Gly Lys Glu Asn Asn Ala Trp Leu Thr Lys Gly				
	100	105	110	
Gly Asp His Gly Trp Glu Glu Val Pro Tyr Trp Leu Lys Gly Tyr Gly				
	115	120	125	
Asn Leu Ala Tyr Ile Leu Lys Asp Gln Lys Met Ile Asp Glu Ala Lys				
130	135	140		
Val Trp Leu Glu Gly Ala Phe Ala Ser Gln Gln Pro Asp Gly Tyr Phe				
145	150	155	160	
Gly Pro Ile Asn Glu Arg Asn Gly Lys Arg Glu Leu Trp Ala Gln Met				
	165	170	175	

Ile Met Leu Trp Cys Leu Gln Ser Tyr Tyr Glu Tyr Ser Asn Asp Gln  
 180 185 190  
 Arg Val Ile Asp Leu Met Thr Asn Tyr Phe Lys Trp Gln Leu Ser Val  
 195 200 205  
 Pro Asp Glu Gln Phe Leu Glu Asp Tyr Xaa Glu Asn Ser Arg Gly Gly  
 210 215 220  
 Asp Asn Leu Leu Ser Val Tyr Trp Leu Tyr Asn Arg Thr Gly Asp Gln  
 225 230 235 240  
 Phe Leu Leu Glu Leu Ala Glu Lys Ile His Arg Asn Thr Ala Asp Trp  
 245 250 255  
 Thr Arg Pro Ser Ala Leu Arg Asn Trp His Asn Val Asn Ile Ala Gln  
 260 265 270  
 Cys Phe Arg Glu Pro Ala Thr Tyr Tyr Met Met Thr Gly Asp Ser Ala  
 275 280 285  
 Met Leu Lys Ala Ser Tyr Asn Val His Asn Leu Ile Arg Arg Thr Phe  
 290 295 300  
 Gly Gln Val Pro Gly Gly Met Phe Gly Ala Asp Glu Asn Ala Arg Met  
 305 310 315 320  
 Gly Ser Ile Asp Pro Arg Gln Gly Val Glu Thr Cys Gly Leu Val Glu  
 325 330 335  
 Gln Met Ala Ser Asp Glu Leu Met Leu Cys Met Thr Gly Asp Pro Leu  
 340 345 350  
 Trp Ala Glu His Cys Glu Glu Val Ala Phe Asn Ser Tyr Pro Ala Ala  
 355 360 365  
 Val Met Pro Asp Phe Lys Gly Leu Arg Tyr Ile Thr Cys Pro Asn Gln  
 370 375 380  
 Thr Val Ser Asp Ser Lys Asn His His Pro Gly Ile Asp Asn Arg Gly  
 385 390 395 400  
 Pro Phe Leu Ala Met Asn Pro Phe Ser Ser Arg Cys Cys Gln His Asn  
 405 410 415  
 His Ala Gln Gly Trp Pro Tyr Tyr Ala Glu His Leu Ile Leu Ala Thr  
 420 425 430  
 Pro Asp Asn Gly Val Ala Ala Ala Met Tyr Ala Ala Cys Lys Ala Thr  
 435 440 445  
 Val Lys Val Gly Asp Gly Ser Glu Ile Ser Leu His Glu Gln Thr Asn  
 450 455 460  
 Tyr Pro Phe Glu Glu Thr Ile Arg Phe Thr Val Asn Thr Pro Lys Ala  
 465 470 475 480  
 Val Ser Phe Pro Phe Tyr Leu Arg Ile Pro Ser Trp Thr Glu Gly Ala  
 485 490 495  
 Thr Ile Phe Val Asn Gly Lys Lys Val Ala Ala Asn Pro Glu Ala Gly  
 500 505 510  
 Gln Tyr Ala Cys Ile Asn Arg Glu Trp Lys Asp Asn Asp Gln Val Glu  
 515 520 525  
 Ile Gln Leu Pro Met Gln Leu Ser Met Arg Thr Trp Gln Val Asn Lys  
 530 535 540  
 Asn Ser Val Ser Val Asp Tyr Gly Pro Leu Thr Met Ser Leu Lys Ile  
 545 550 555 560  
 Asp Glu Asp Tyr Val Lys Lys Asp Ser Arg Ala Thr Ala Ile Gly Asp  
 565 570 575  
 Ser Lys Trp Gln Glu Gly Ala Asp Ala Ser Gln Trp Pro Thr Tyr Glu  
 580 585 590  
 Ile Tyr Ala Lys Thr Pro Trp Asn Tyr Ala Leu Val Leu Gly Lys Asn  
 595 600 605  
 Glu Pro Leu Lys Asp Phe Lys Val Val His Lys Glu Trp Pro Ala Asp  
 610 615 620  
 Asn Phe Pro Phe Thr Val Ala Ser Thr Pro Ile Glu Val Lys Ala Ile  
 625 630 635 640  
 Gly Arg Lys Val Pro Ser Trp Val Ile Asp Gln Tyr Asp Leu Cys Ser



645                      650                      655  
 Glu Leu Pro Glu Met Asp Ala Pro Lys Gly Glu Lys Glu Glu Ile Thr  
                     660                      665                      670  
 Leu Ile Pro Met Gly Ala Ala Arg Leu Arg Val Ser Ala Phe Pro Asn  
                     675                      680                      685  
 Thr Arg Glu  
                     690

<210> 8621

<211> 528

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (65), (517)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8621

Leu Ser Arg Leu Val Ala Ala Tyr Gly Asp Ala Glu Asn Thr Pro Ala  
 1                      5                      10                      15  
 Ile Leu Phe Cys His Glu Arg Ser Thr Gly His Pro Val Tyr Asp Arg  
                     20                      25                      30  
 Leu Phe Pro Leu Ser Thr Glu Asn Val Thr Gly Lys Ala Ala Arg Gln  
                     35                      40                      45  
 Leu Asp Phe Leu Gly Arg Val Ser Trp Pro Cys Lys Asn Ile Gln Ala  
                     50                      55                      60  
 Xaa Tyr Trp Leu Tyr Asn Ile Thr Gly Asp Ser Phe Leu Leu Asp Leu  
 65                      70                      75                      80  
 Gly Lys Leu Ile His Gln Gln Ser Phe Ser Phe Val Asp Met Val Asn  
                     85                      90                      95  
 Arg Gly Asp Leu Lys Arg Ile Asn Thr Ile His Cys Val Asn Leu Ala  
                     100                      105                      110  
 Gln Gly Ile Lys Glu Pro Val Ile Tyr Tyr Gln Gln Glu Pro Asp Lys  
                     115                      120                      125  
 Met Tyr Leu Asp Ala Val Lys Cys Ala Phe Arg Asp Ile Arg Gln Phe  
                     130                      135                      140  
 His Gly Gln Pro Gln Gly Met Tyr Gly Gly Asp Glu Ala Leu His Gly  
 145                      150                      155                      160  
 Asn Asn Pro Thr Gln Gly Ser Glu Leu Cys Ser Ala Val Glu Leu Met  
                     165                      170                      175  
 Tyr Ser Leu Glu Lys Met Val Glu Ile Thr Gly Asp Ile Asp Phe Ala  
                     180                      185                      190  
 Asp His Leu Glu Arg Ile Ala Phe Asn Ala Leu Pro Thr Gln Ile Ser  
                     195                      200                      205  
 Asp Asp Phe Met Thr Lys Gln Tyr Phe Gln Gln Ala Asn Gln Val Met  
                     210                      215                      220  
 Val Ser Arg His Arg Arg Asn Phe Asp Gln Asp His Gly Gly Thr Asp  
 225                      230                      235                      240  
 Asn Cys Phe Gly Leu Leu Thr Gly Tyr Pro Cys Cys Ala Ser Asn Met  
                     245                      250                      255  
 His Gln Gly Trp Pro Lys Phe Thr Gln Ser Leu Trp Tyr Ala Thr Pro  
                     260                      265                      270  
 Asp Gly Gly Leu Ala Val Thr Ala Tyr Ala Pro Ser Glu Val Thr Ala  
                     275                      280                      285  
 Lys Val Ala Asp Gly Cys Thr Val Thr Phe Ser Glu Glu Thr Tyr Tyr  
                     290                      295                      300  
 Pro Met Asp Asp Lys Ile Ser Phe Thr Leu Gln Ser Met Asp Lys Lys  
 305                      310                      315                      320

Arg Lys Glu Val Asn Phe Ala Leu Gln Leu Arg Ile Pro Lys Trp Cys  
 325 330 335  
 Arg Gln Ala Gly Ile Ser Val Asn Gly Gln Leu Leu Gln His Ala Glu  
 340 345 350  
 Gly Gly Arg Met Ala Ile Val Asn Arg Asn Trp Lys Lys Gly Asp Arg  
 355 360 365  
 Val Glu Leu His Leu Pro Met Glu Val Thr Ala Ser Thr Trp Tyr Glu  
 370 375 380  
 Asn Ser Val Thr Ile Glu Arg Gly Pro Leu Val Phe Ala Leu Lys Met  
 385 390 395 400  
 Glu Glu Lys Trp Glu Lys Lys Glu Phe Glu Glu Pro Trp Tyr Gly Pro  
 405 410 415  
 Tyr Tyr Tyr Ser Val Thr Pro Thr Glu Pro Trp Asn Tyr Gly Leu Val  
 420 425 430  
 Asp Phe Asn Arg Asn Lys Ala Asn Glu His Ala Arg Val Thr Ile His  
 435 440 445  
 Thr Glu Lys Gln Ser Ser Val Phe Pro Trp Asn Lys Glu Asn Ala Pro  
 450 455 460  
 Ile Glu Ile Arg Met Lys Ala Arg Leu Val Pro Ser Trp Lys Leu Tyr  
 465 470 475 480  
 Asn Glu Met Ala Gly Pro Gln Pro Tyr Ser Phe Cys Ser Gly Gly Glu  
 485 490 495  
 Arg Ala Gly Asn Arg Asn His Pro Glu Phe Leu Trp Met His Tyr Ile  
 500 505 510  
 Lys Asn Thr Glu Xaa Pro Val Val Gly Ala Phe Arg Leu Arg Gly Asp  
 515 520 525

&lt;210&gt; 8622

&lt;211&gt; 244

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (227)

&lt;223&gt; Identity of amino acid sequences at the above locations are unknown.

&lt;400&gt; 8622

Ser Ile Asn Arg Lys Thr Leu Met Lys Lys Lys Asn Thr Phe Thr Tyr  
 1 5 10 15  
 Leu Leu Ile Gly Leu Gly Leu Cys Phe Ser Ser Leu Gly Ser Gly Leu  
 20 25 30  
 Arg Ala Asp Thr Pro Glu Asn Tyr Thr Asn Asn Arg Tyr Pro Leu Val  
 35 40 45  
 Arg Lys Pro Leu Met Glu Leu Pro Leu Gly Ser Ile Lys Ala Lys Gly  
 50 55 60  
 Trp Leu Gln Glu Met Leu Val Arg Gln Lys Asn Gly Ala Thr Gly Gln  
 65 70 75 80  
 Met Asp Lys Leu Tyr Pro Leu Val Met Gly Glu Arg Asn Gly Trp Leu  
 85 90 95  
 Gly Gly Asp Gly Asp Gln Trp Glu Arg Gly Pro Tyr Trp Ile Asp Gly  
 100 105 110  
 Leu Leu Pro Leu Ala Tyr Ile Leu Asp Asp Ala Gln Leu Lys Ala Lys  
 115 120 125  
 Val Gln Pro Trp Ile Glu Trp Ala Leu Lys Ser Gln Arg Glu Asp Gly  
 130 135 140  
 Phe Phe Gly Pro Ala Lys Asp Tyr Pro Gly Glu Ala Gly Ile Gln Arg  
 145 150 155 160  
 Asp Asn Ser His Asp Trp Trp Pro Arg Met Val Met Leu Lys Ile Leu

165 170 175  
 Gln Gln Tyr Tyr Ser Ala Thr Asn Asp Gln Arg Val Ile Arg Phe Met  
 180 185 190  
 Thr Asp Tyr Phe Arg Tyr Gln Leu Lys Thr Leu Pro Glu Lys Pro Leu  
 195 200 205  
 Gly Asn Trp Thr Phe Trp Ala Glu Phe Pro Gly Leu Ala Lys Ile Ser  
 210 215 220  
 Arg Pro Xaa Thr Gly Ser Ile Ile Ser Pro Val Ile His Ser Tyr Ser  
 225 230 235 240  
 Ile Ser Ala Asn

<210> 8623  
 <211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 8623  
 Pro Leu Gly Gly Lys Lys Phe Phe His Trp Lys Trp Gly Phe Lys Ser  
 1 5 10 15  
 Phe Phe Pro Phe His Phe Lys Ala Gly Lys Lys Glu Asp Leu Cys Met  
 20 25 30  
 Asn Ile Arg Leu Leu Leu Ile Trp Phe Gly Met Ile Asn His Leu Ser  
 35 40 45  
 Ile Gly Arg Leu Pro Leu Pro Glu Ile Pro Tyr Ser  
 50 55 60

<210> 8624  
 <211> 371  
 <212> PRT  
 <213> B.fragilis

<400> 8624  
 Gln Lys Ala Met Lys Thr Lys Ile Tyr Leu Leu Phe Ile Thr Thr Leu  
 1 5 10 15  
 Phe Phe Cys Ala Gly Cys Gly Asn Lys Ser Gly Gly Gln Lys Gln Glu  
 20 25 30  
 Ser Val Ser Ala Ala Lys Asp Thr Tyr Val Asn Pro Leu Phe Pro Glu  
 35 40 45  
 Gly Ala Asp Pro Ser Ala Leu Phe His Asn Gly Lys Tyr Tyr Tyr Thr  
 50 55 60  
 His Gly Thr Glu Asp Lys Ile Met Leu Trp Glu Thr Ser Asp Ile Thr  
 65 70 75 80  
 Asp Met Ala His Ala Val Cys Lys Ile Val Trp Lys Pro His Asp Pro  
 85 90 95  
 Ser Asn Ser Cys His Leu Trp Ala Pro Glu Ile His Tyr Ile Asn Asp  
 100 105 110  
 Lys Trp Tyr Ile Tyr Tyr Ala Ala Asp Gly Asp Asn Ala Asp Asn His  
 115 120 125  
 Gln Leu Tyr Val Leu Glu Asn Ser Ser Pro Asp Pro Met Glu Gly Lys  
 130 135 140  
 Phe Glu Met Lys Gly Ser Ile Ile Thr Asn Pro Glu Trp Asn Trp Gly  
 145 150 155 160  
 Ile Gln Ala Thr Thr Phe Glu His Lys Gly Val Arg Tyr Leu Ala Trp  
 165 170 175  
 Ser Gly Trp Pro Lys Arg Arg Thr Asn Ala Glu Thr Gln Cys Ile Tyr  
 180 185 190  
 Ile Ala Arg Met Lys Asp Pro Trp Thr Leu Asp Ser Pro Arg Val Leu  
 195 200 205

Ile Ser Lys Pro Glu Tyr Glu Trp Glu Arg Gln Trp Val Asn Pro Asp  
 210 215 220  
 Gly Ser Arg Thr Ala Tyr Pro Ile Tyr Val Asn Glu Gly Pro Gln Phe  
 225 230 235 240  
 Phe His Ser Lys Asp Asn Lys Thr Leu Ile Leu Tyr Tyr Ala Ala Ser  
 245 250 255  
 Gly Ser Trp Ser Pro Tyr Tyr Cys Val Gly Met Leu Thr Ala Asp Ala  
 260 265 270  
 Glu Ser Asp Leu Leu Asp Pro Ala Ser Trp Thr Lys Ser Ser Val Pro  
 275 280 285  
 Val Phe Gln Gln Ser Leu Glu Asn Glu Val Tyr Gly Pro Gly Gly Leu  
 290 295 300  
 Ser Phe Val Pro Ser Pro Asp Gly Thr Glu Trp Tyr Met Ile Tyr His  
 305 310 315 320  
 Ala Arg Gln Val Thr Asn Gly Asp Thr Gly Ser Pro Glu Thr Arg Asn  
 325 330 335  
 Pro Arg Ile Gln Lys Ile Gly Trp Asp Ala His Gly Met Pro Asp Leu  
 340 345 350  
 Gly Ile Pro Val Arg Ala Gly Val Ala Leu Pro Lys Pro Ser Gly Thr  
 355 360 365  
 Leu Leu Lys  
 370

<210> 8625

<211> 740

<212> PRT

<213> B.fragilis

<400> 8625

Tyr Tyr Glu Ser Met Lys Leu Asn Ser Phe Pro His Tyr Leu Gln Leu  
 1 5 10 15  
 Asp Ala Met Asp Cys Gly Pro Ser Cys Leu Arg Met Ile Ala Lys Tyr  
 20 25 30  
 Tyr Gly Lys Ser Tyr Ser Leu Gln Thr Leu Arg Ala Arg Ser Phe Ile  
 35 40 45  
 Thr Arg Glu Gly Val Ser Met Leu Gly Ile Ser Asp Ala Ala Glu Ser  
 50 55 60  
 Ile Gly Phe Arg Thr Ser Gly Val Arg Ile Ser Leu Glu Gln Leu Lys  
 65 70 75 80  
 Lys Asp Val Pro Leu Pro Cys Ile Leu His Trp Asn Gln Asn His Phe  
 85 90 95  
 Val Val Cys Tyr Asp Ile Lys Lys Lys Arg Ser Gly Tyr Arg Phe Tyr  
 100 105 110  
 Ile Ala Asp Pro Ala Arg Gln Leu Ile Ser Tyr Ser Glu Glu Glu Phe  
 115 120 125  
 Lys Lys Cys Trp Leu Ser Thr Lys Val Asn Gly Glu Glu Lys Gly Ala  
 130 135 140  
 Ala Leu Ala Leu Glu Pro Gly Pro Glu Phe Gln Gly Gln Gly Asp Glu  
 145 150 155 160  
 Glu Glu Ser Gly Ser Arg Ser Leu Arg Phe Phe Leu Lys Tyr Leu Ser  
 165 170 175  
 Pro Tyr Arg Lys Gln Leu Ile Gln Leu Ile Leu Gly Met Leu Thr Ala  
 180 185 190  
 Ser Leu Leu Gln Leu Ile Phe Pro Phe Leu Thr Gln Ser Leu Val Asp  
 195 200 205  
 Val Gly Ile Arg Asp Gly Asn Leu Asn Phe Ile Thr Leu Ile Leu Ile  
 210 215 220  
 Ser Gln Leu Val Ile Ser Val Ser Gln Leu Ser Val Glu Phe Ile Arg  
 225 230 235 240

Ser	Trp	Ile	Met	Leu	His	Met	Asn	Thr	Arg	Ile	Asn	Ile	Ser	Leu	Ile
				245					250					255	
Ser	Asp	Phe	Leu	Ala	Lys	Leu	Met	Lys	Leu	Pro	Leu	His	Tyr	Phe	Asp
			260					265					270		
Thr	Lys	Met	Ile	Gly	Asp	Ile	Met	Gln	Arg	Ile	Gly	Asp	His	Gly	Arg
		275					280					285			
Ile	Glu	Ser	Phe	Leu	Thr	Gly	Ser	Ser	Ile	Ser	Thr	Leu	Phe	Ser	Phe
	290					295					300				
Val	Asn	Phe	Phe	Ile	Phe	Ala	Phe	Val	Leu	Ala	Tyr	Tyr	Asn	Leu	Gly
305					310					315					320
Ile	Leu	Ala	Ile	Phe	Leu	Val	Gly	Asn	Ser	Leu	Tyr	Ile	Cys	Trp	Ile
			325					330						335	
Leu	Val	Phe	Met	Lys	Tyr	Arg	Arg	Glu	Leu	Asp	Ile	Arg	Arg	Phe	Ala
			340					345					350		
Gln	Ala	Ala	Gly	Glu	Gln	Ser	Ser	Leu	Ile	Gln	Leu	Val	Thr	Ala	Met
		355					360					365			
Gln	Glu	Ile	Lys	Leu	Asn	Asn	Cys	Glu	Lys	Gln	Lys	Arg	Trp	Gln	Trp
	370				375						380				
Glu	Arg	Ile	Gln	Val	Lys	Leu	Phe	Lys	Ile	Ser	Val	Lys	Gly	Leu	Ala
385					390					395					400
Leu	Gly	Gln	Val	Gln	Gln	Val	Gly	Ser	Val	Phe	Phe	Asn	Gln	Thr	Thr
			405					410						415	
Asn	Ile	Val	Ile	Ser	Phe	Ile	Ala	Ala	Lys	Ser	Val	Val	Glu	Gly	Asn
		420					425						430		
Met	Thr	Leu	Gly	Met	Met	Met	Ser	Leu	Thr	Tyr	Ile	Ile	Gly	Gln	Leu
	435						440					445			
Ser	Gly	Pro	Ile	Gly	Ser	Phe	Ile	Gly	Phe	Ala	Gln	Leu	Gln	Asp	
	450				455					460					
Ala	Lys	Ile	Ser	Leu	Glu	Arg	Leu	Asn	Glu	Ile	His	Gly	Gln	Lys	Asp
465					470					475					480
Glu	Glu	Gln	Asp	Ile	Ala	Ser	Lys	Leu	Thr	Val	Leu	Pro	Glu	Arg	Arg
			485						490					495	
Asp	Ile	Arg	Ile	Glu	Asn	Leu	Ser	Phe	Ser	Tyr	Asp	Gly	Ala	Asp	Arg
		500						505					510		
Asp	Tyr	Val	Leu	Asn	Asp	Val	Asn	Leu	Asn	Ile	Pro	Glu	His	Lys	Val
	515						520					525			
Thr	Ala	Ile	Val	Gly	Ala	Ser	Gly	Ser	Gly	Lys	Thr	Thr	Leu	Ile	Lys
	530				535						540				
Leu	Met	Leu	Gly	Phe	Tyr	Thr	Pro	Asn	Lys	Gly	Asp	Ile	Lys	Ile	Gly
545					550					555					560
Glu	Thr	Pro	Leu	Asp	Val	Val	Asn	Pro	His	Leu	Trp	Arg	Ala	Lys	Ser
			565						570					575	
Gly	Ser	Val	Met	Gln	Asp	Gly	Phe	Ile	Leu	Ser	Asp	Thr	Ile	Ala	Asn
		580						585					590		
Asn	Ile	Ala													

705                      710                      715                      720  
 Leu Thr Glu Lys Lys Gly Leu Tyr Tyr Gln Leu Val Lys Asn Gln Leu  
                                  725                      730                      735  
 Glu Leu Gly Ser  
                                  740

<210> 8626  
 <211> 203  
 <212> PRT  
 <213> B.fragilis

<400> 8626  
 Lys Lys Asn Lys Met Asp Ala His Ile Glu Gln Ile Ala Lys Ser Leu  
 1                      5                      10                      15  
 Tyr Phe Ser Cys Lys Gln Phe Asp Ile Gly Leu Phe Tyr Gly Lys Met  
                                  20                      25                      30  
 Gly Arg Cys Leu Phe Phe Phe Asp Tyr Ser Arg Val Thr Glu Leu Arg  
                                  35                      40                      45  
 Ala Phe Glu Glu Leu Ala Gly Glu Leu Leu Asp Glu Val Met Glu Ser  
                                  50                      55                      60  
 Val Cys Leu Gly Met Pro Val Gly Leu Ser Phe Gly Trp Cys Gly Ile  
 65                      70                      75                      80  
 Gly Trp Gly Val Glu Tyr Leu Val Arg Lys Gly Phe Val Glu Asp Asp  
                                  85                      90                      95  
 Asp Asn Glu Gly Arg Asn Lys Ile Asp Glu Lys Val Met Glu Tyr Asp  
                                  100                      105                      110  
 Val Arg Arg Leu Gly Asp Tyr Ser Leu Ala Thr Gly Leu Glu Gly Ile  
                                  115                      120                      125  
 Ser Trp Tyr Val Leu Leu Arg Leu Tyr Ser Gly Asp Lys Gly Val Arg  
                                  130                      135                      140  
 Ile Gly Glu Lys Asn Tyr Leu Ser Asp Leu Lys Ser Ala Cys Glu Lys  
 145                      150                      155                      160  
 Ala Leu Lys Lys Gly Arg Tyr Glu Gly Ile Leu Leu Leu Leu Asp Phe  
                                  165                      170                      175  
 Leu Asn Gly Lys Arg Ala Asn Tyr Pro Phe Gly Glu Phe Phe Ser Gln  
                                  180                      185                      190  
 Ile Pro Gly Glu Ala His Tyr Ile Pro Asp Met  
                                  195                      200

<210> 8627  
 <211> 223  
 <212> PRT  
 <213> B.fragilis

<400> 8627  
 Tyr Val Met Lys Asp Ile Thr Met Leu Asn Lys Pro Pro Leu Asp Phe  
 1                      5                      10                      15  
 Phe Gly Cys Asn Phe Cys Leu Val Glu Lys His Arg Met Ala Phe Val  
                                  20                      25                      30  
 Leu Ile Ser Lys Cys Gly Leu Thr Phe Leu Glu Asn Ile Ala Ile Tyr  
                                  35                      40                      45  
 Ala Ser Ala Gly Met Ile Pro Asp Thr Glu Asp Gln Thr His Phe Tyr  
                                  50                      55                      60  
 Ile Ala Arg Val Lys Pro Glu Arg Phe Leu Val Pro Val Ser Glu Met  
 65                      70                      75                      80  
 Ser Gly Tyr Glu Arg Glu His Lys Ser Tyr Leu Lys Val Ala Val Trp  
                                  85                      90                      95  
 Arg Asp Pro Val Glu Arg Leu Val Ser Ala Tyr Lys Tyr Phe Ile Leu  
                                  100                      105                      110

Glu Arg Thr Phe Asn Gln Tyr Met Tyr Met Cys Asn Leu Tyr Gln Asp  
 115 120 125  
 Cys Ser Phe Glu Arg Phe Leu Ser Phe Val Glu Phe Glu Leu Gly Lys  
 130 135 140  
 Ala Asn Pro Leu Trp Gln Asp Glu His Ile Arg Arg Gln Ser Asp Phe  
 145 150 155 160  
 Tyr Thr Ser Ala Asp Val Asp Cys Ile Val Pro Leu Ser Lys Leu Asn  
 165 170 175  
 Arg Phe Leu Ala Glu Arg Gly Val Asp Met Pro Glu Glu Lys Ala Asn  
 180 185 190  
 Ala Thr Ser Val Arg Phe Glu Leu Lys Asp Glu Lys Gln Ile Ala Lys  
 195 200 205  
 Ile Lys Glu Leu Tyr Arg Leu Asp Tyr Glu Ile Pro Val Gly Cys  
 210 215 220

<210> 8628  
 <211> 239  
 <212> PRT  
 <213> B.fragilis

<400> 8628  
 Pro Leu Val Lys Thr Leu Ala Gly Arg Glu Cys Phe Ala Gly Val Met  
 1 5 10 15  
 Cys Tyr Cys Thr Lys Thr Arg Thr Asp Ile Val Ser Gly Asn Thr Leu  
 20 25 30  
 Ala Val His Ala Asp Gly Gln Val Gln Ser Trp Glu Arg Arg Gly Arg  
 35 40 45  
 Glu Leu Phe Ala Thr Gly Thr Val Val Ser Gly Ser Thr Tyr Phe Ser  
 50 55 60  
 Arg Val Met Asp Cys Arg Cys Tyr Val Pro Met Val Tyr Asn Tyr Leu  
 65 70 75 80  
 Tyr Arg Arg Asp Phe Ile Glu Gln Asn Gly Phe Arg Phe Glu Pro Gly  
 85 90 95  
 Leu Val His Glu Asp Glu Leu Trp Thr Pro Gln Val Leu Thr Thr Ala  
 100 105 110  
 Gln Lys Ile Thr Val Ala Asp Ile Asp Phe Tyr Tyr Tyr Arg Gln Arg  
 115 120 125  
 Glu Gly Ser Ile Met Thr Ala Thr Ala Ala Gly Arg Arg Ile Ala Ser  
 130 135 140  
 Ile Gln Leu Ile Ile Glu Lys Leu Leu Glu Tyr Ser Arg Lys His Leu  
 145 150 155 160  
 Phe Glu Lys Lys Tyr Arg Glu Ala Lys Glu Ala Leu Tyr Val Arg Leu  
 165 170 175  
 Leu Gln Ile Tyr Ser Thr Ala Cys Thr Leu His Pro Asp Gly Thr Tyr  
 180 185 190  
 Thr Thr Leu Tyr Asp Arg Ala Gly Glu Met Leu Arg Val Cys Glu Glu  
 195 200 205  
 Leu Arg Arg Gln Glu Ser Leu Gly Arg Trp Tyr Ser Glu Glu Ile Leu  
 210 215 220  
 Asn Arg Met Lys Leu Tyr Tyr Asp Arg Leu Gln Thr Met Glu Gly  
 225 230 235

<210> 8629  
 <211> 208  
 <212> PRT  
 <213> B.fragilis

<400> 8629  
 Gly Cys Cys Ser Arg Arg Gly Asn Pro Pro Gly Thr Asp Gly Lys Glu

1	5	10	15
Arg Ile Val	Leu Ser Val Gly Glu	Glu Ser Val Gly Ile	Arg Lys Leu
	20	25	30
Asp Met Glu	Lys Glu His Thr His	Lys Glu Ile Glu Leu	Arg Ser Glu
	35	40	45
Glu Val Gln	Glu Val Met Asn Arg Val	Pro Ala Trp Ile Leu	Arg Ser
	50	55	60
Gly Ile Thr	Val Leu Phe Val Ile Val	Val Ala Leu Val Ala	Gly Ser
65		70	75
Tyr Trp Phe	Lys Tyr Pro Asp Val Ile	Ala Ala Glu Val Thr	Val Ser
	85	90	95
Thr Gln Asp	Pro Pro Ala Tyr Val Val	Ala Arg Ala Ala Gly	Arg Leu
	100	105	110
Glu Asn Leu	Tyr Val Gln Asn Gly Gln	Glu Val Glu Pro Asp	Thr Asn
	115	120	125
Leu Gly Thr	Ile Glu Asn Thr Ala Cys	Ala Ser Asp Val Phe	Ser Leu
	130	135	140
Gln Glu Arg	Met Arg Lys Trp Lys Gln	Glu Gly Tyr Thr Pro	Glu Ser
145		150	155
Gly Lys Gly	Leu Phe Leu His Ser Glu	Thr Asp Arg Trp Arg	Leu Gly
	165	170	175
Glu Ile Gln	Ser Ala Tyr Ala Ala Phe	Val Ser Thr Leu Ser	Glu Met
	180	185	190
Val Arg Met	Asn Glu Leu Gly Tyr Tyr	Ala Lys Lys Leu Gln	Ser Ser
	195	200	205

<210> 8630  
 <211> 255  
 <212> PRT  
 <213> B.fragilis

<400> 8630
Arg Pro Gln Leu Glu Ser Phe Glu Ser Ile Thr Gly Lys Gly Ile Lys
1 5 10 15
Val Val Tyr Gln Gly Asp Thr Tyr Trp Val Gly Ser His Lys Leu Leu
20 25 30
Lys Asp Phe Ser Ala Ser Leu Ser Asp Val Leu Ala Glu Met Met Val
35 40 45
Gln Tyr Glu Ser Asp Gly Asn Ser Ile Val Tyr Phe Gly Arg Gly Thr
50 55 60
Glu Val Leu Ala Val Val Ala Ile Ala Asp Gln Ile Lys Pro Thr Ser
65 70 75 80
Ala Glu Ala Val Lys Glu Leu Lys Arg Gln Gly Ile Asp Ile Cys Met
85 90 95
Leu Thr Gly Asp Gly Gln Arg Thr Ala Leu Ala Val Ser Gly Lys Leu
100 105 110
Gly Ile Asp Arg Phe Val Ala Asp Ala Leu Pro Asp Asp Lys Glu Glu
115 120 125
Phe Val Arg Glu Leu Gln Met Gln Gly Lys Thr Val Ala Met Val Gly
130 135 140
Asp Gly Ile Asn Asp Ser Gln Ala Leu Ala Leu Ala Asp Val Ser Ile
145 150 155 160
Ala Met Gly Lys Gly Thr Asp Ile Ala Met Asp Val Ala Met Val Thr
165 170 175
Leu Met Thr Ser Asp Leu Leu Leu Leu Pro Arg Ala Phe Glu Leu Ser
180 185 190
Lys Gln Thr Val Lys Leu Ile His Gln Asn Leu Phe Trp Ala Phe Ile
195 200 205
Tyr Asn Leu Ile Gly Ile Pro Ile Ala Ala Gly Ile Leu Phe Pro Val



210	215	220
Asn Gly Leu Leu Leu Asn	Pro Met Leu Ala Ser	Ala Ala Met Ala Phe
225	230	235
Ser Ser Val Ser Val Val	Leu Asn Ser Leu Ser	Leu Ala Arg Lys
245	250	255

<210> 8631  
 <211> 67  
 <212> PRT  
 <213> B.fragilis

<400> 8631  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 1 5 10 15  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 20 25 30  
 Lys Lys Lys Asn Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 35 40 45  
 Lys Lys Asn Pro Gln Gly Pro Leu Cys Tyr Ser Val Pro Ser Val Val  
 50 55 60  
 Ser Ser Phe  
 65

<210> 8632  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8632  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 1 5 10 15  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 20 25 30  
 Lys Lys Lys Ile Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 35 40 45  
 Lys Lys Thr Pro Lys Asp Leu Cys Val Thr Leu Cys Pro Leu Trp  
 50 55 60

<210> 8633  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 8633  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Pro Pro  
 1 5 10 15  
 Arg Thr Ser Val Leu Leu Cys Ala Leu Cys Gly Glu Phe Val Leu Lys  
 20 25 30  
 Gly Ile Val Ile Phe Trp Pro Asp Ser Val Asn Ser Ala Arg His Leu  
 35 40 45  
 His Leu Lys Met Pro Ser Leu His Trp Gln Ala Ser Asp  
 50 55 60

<210> 8634  
 <211> 767  
 <212> PRT  
 <213> B.fragilis

<400> 8634

8631 8632 8633 8634  
 B.fragilis B.fragilis B.fragilis B.fragilis

Leu Val Ser Pro Cys Ala Val Cys Gly Glu Ser Tyr Leu Phe Leu Ile  
 1 5 10 15  
 Glu Tyr Lys Pro Asn Lys Lys Asp Lys Arg Arg Asn Leu Met Lys Tyr  
 20 25 30  
 Met Leu Leu Thr Gly Leu Leu Leu Gly Ser Leu Thr Val Gln Ala Gln  
 35 40 45  
 Val Ser Gly Thr Val Lys Asp Gln Ala Gly Glu Pro Ile Ile Gly Ala  
 50 55 60  
 Asn Val Phe Trp Lys Asn Ile Ser Gly Gly Val Ala Thr Arg Glu Asp  
 65 70 75 80  
 Gly Thr Phe Ser Ile Ser Lys Pro Asp Lys Ser Asn His Leu Ile Val  
 85 90 95  
 Ser Phe Ile Gly Tyr Glu Asn Asp Thr Ile Gln Val Asn Asp Lys Lys  
 100 105 110  
 Ala Val Leu Asp Val Val Leu Arg Glu Gly Met Glu Leu Ser Glu Val  
 115 120 125  
 Gln Ile Val Ser Arg Lys Leu Ser Thr Leu Lys Leu Arg Ser Ser Val  
 130 135 140  
 Met Asn Glu Glu Ile Ile Thr Ser Asp Glu Leu Cys Arg Ala Ala Cys  
 145 150 155 160  
 Cys Asn Leu Gly Glu Ser Phe Val Thr Asn Pro Ser Val Asp Val Ser  
 165 170 175  
 Tyr Ser Asp Ala Ala Thr Gly Ala Lys Gln Ile Lys Leu Leu Gly Leu  
 180 185 190  
 Ser Gly Thr Tyr Val Gln Met Leu Thr Glu Asn Ile Pro Asn Tyr Arg  
 195 200 205  
 Gly Ala Ala Ser Pro Tyr Gly Leu Gly Tyr Val Pro Gly Pro Trp Met  
 210 215 220  
 His Ser Ile Gln Val Ser Lys Gly Ile Ser Ser Val Lys Asn Gly Tyr  
 225 230 235 240  
 Glu Ala Leu Thr Gly Gln Ile Asn Val Glu Phe Lys Lys Pro Gln Leu  
 245 250 255  
 Pro Glu Ala Asp Trp Val Ser Ala Asn Leu Phe Ala Ser Thr Thr Asn  
 260 265 270  
 Arg Tyr Glu Ala Asn Ala Asp Ala Thr Val Lys Leu Ser Lys Arg Trp  
 275 280 285  
 Ser Thr Ser Leu Leu Ala His Tyr Glu Asn Glu Thr Lys Ala His Asp  
 290 295 300  
 Gly Asn Asp Asp Gly Phe Ala Asp Ile Pro Arg Ile Glu Gln Tyr Asn  
 305 310 315 320  
 Phe Trp Asn Arg Trp Ala Tyr Met Gly Asp His Tyr Val Phe Gln Ala  
 325 330 335  
 Gly Ile Lys Ala Leu Asp Glu Ser Arg Lys Gly Gly Gln Val Ser His  
 340 345 350  
 Ser Gly Val Pro Ala Ala Asp Arg Tyr Glu Ile Asp Ile Asp Thr Arg  
 355 360 365  
 Arg Tyr Glu Ala Phe Thr Lys Asn Ala Tyr Ile Phe Asn Lys Glu Lys  
 370 375 380  
 Asn Thr Asn Leu Ala Leu Ile Leu Ser Gly Thr Leu His Asn Gln Asp  
 385 390 395 400  
 Ala Leu Tyr Gly Arg Lys Ile Tyr Asn Val Asp Gln Ser Asn Ala Tyr  
 405 410 415  
 Ala Ser Leu Met Phe Glu Thr Glu Phe Thr Lys Glu His Asn Leu Ser  
 420 425 430  
 Ala Gly Phe Ser Tyr Asn Tyr Asp Gly Tyr Asp Gln His Tyr Arg Leu  
 435 440 445  
 Thr Asn Asn Ala Glu Thr Pro Leu Thr Lys Ala Phe Ala Arg Glu Ser  
 450 455 460  
 Val Gly Gly Ala Tyr Ala Gln Tyr Thr Phe Asn Leu Asp Asn Lys Phe

465		470		475		480									
Val	Leu	Met	Ala	Gly	Leu	Arg	Gly	Asp	His	Ser	Ser	Glu	Tyr	Gly	Phe
			485					490						495	
Phe	Val	Thr	Pro	Arg	Ala	His	Ile	Lys	Tyr	Asn	Pro	Asn	Asp	Phe	Val
			500					505					510		
His	Phe	Arg	Leu	Ser	Ala	Gly	Lys	Gly	Tyr	Arg	Thr	Asn	His	Val	Leu
			515					520				525			
Ala	Glu	Asn	Asn	Tyr	Leu	Met	Ala	Ser	Ser	Arg	Lys	Val	Ser	Ile	Ala
			530				535				540				
Asp	His	Leu	Asp	Gln	Glu	Glu	Ala	Trp	Asn	Tyr	Gly	Ala	Ser	Ile	Ser
545							550				555				560
Gly	Tyr	Ile	Pro	Leu	Phe	Gly	Lys	Thr	Leu	Asn	Leu	Asn	Leu	Glu	Tyr
							565				570				575
Tyr	Tyr	Thr	Asp	Phe	Leu	Lys	Gln	Val	Val	Val	Asp	Met	Asp	Thr	Asn
			580					585						590	
Pro	His	Glu	Val	Ala	Phe	Tyr	Asn	Leu	Asp	Gly	Arg	Ser	Tyr	Ser	Gln
			595					600				605			
Val	Phe	Gln	Val	Glu	Ala	Thr	Tyr	Pro	Phe	Phe	Gln	Gly	Phe	Ser	Leu
			610				615					620			
Thr	Ala	Ala	Tyr	Arg	Trp	Thr	Asp	Ala	Lys	Thr	Thr	Tyr	Asn	His	Gln
625							630					635			640
Leu	Met	Glu	Lys	Pro	Leu	Thr	Gly	Lys	Tyr	Lys	Gly	Leu	Val	Thr	Ala
							645				650				655
Ser	Tyr	Gln	Thr	Pro	Leu	Gly	Leu	Trp	Gln	Phe	Asp	Ala	Thr	Trp	Gln
			660					665						670	
Met	Asn	Gly	Gly	Gly	Arg	Met	Pro	Asn	Pro	Tyr	Thr	Leu	Ala	Asp	Gly
			675					680						685	
Thr	Ser	Ser	Trp	Asp	Ala	Arg	Tyr	Lys	Gly	Phe	Ser	Gln	Leu	Ser	Ala
			690					695				700			
Gln	Val	Thr	Arg	Tyr	Phe	Arg	Arg	Trp	Ser	Ile	Tyr	Ile	Gly	Gly	Glu
705							710				715				720
Asn	Leu	Thr	Asn	Phe	Lys	Gln	Lys	Asn	Pro	Ile	Ile	Asp	Ala	Ala	Asp
							725				730				735
Pro	Trp	Gly	Asp	Arg	Phe	Asp	Ser	Thr	Met	Ile	Trp	Gly	Pro	Val	His
			740					745						750	
Gly	Ala	Lys	Gly	Tyr	Ile	Gly	Val	Arg	Phe	Asn	Leu	Ala	Arg	Asp	
			755					760					765		

&lt;210&gt; 8635

&lt;211&gt; 190

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8635

Ile	Met	Lys	Thr	Asn	Glu	Val	Leu	Glu	Thr	Ile	Lys	Ala	Arg	Arg	Ser
1				5					10					15	
Val	Arg	Ala	Tyr	Asp	Arg	Lys	Gln	Ile	Pro	Ala	Asp	Asp	Leu	Asn	Ala
			20					25					30		
Ile	Leu	Glu	Ala	Gly	Ala	Tyr	Ala	Pro	Ser	Gly	Met	His	Tyr	Glu	Thr
			35				40					45			
Trp	His	Phe	Thr	Ala	Val	Cys	Asn	Thr	Val	Lys	Leu	Glu	Glu	Leu	Asn
			50				55				60				
Glu	Arg	Ile	Lys	Gly	Ala	Phe	Ala	Lys	Ser	Asp	Asp	Lys	His	Leu	Arg
65						70				75					80
Glu	Arg	Gly	His	Ser	Glu	Thr	Tyr	Cys	Cys	Tyr	Tyr	His	Ala	Pro	Thr
				85					90					95	
Leu	Val	Ile	Val	Ser	Asn	Glu	Pro	Lys	Gln	Trp	Trp	Ala	Gly	Met	Asp
				100				105					110		
Cys	Ala	Cys	Ala	Ile	Glu	Asn	Met	Phe	Leu	Ala	Ala	Thr	Ser	Leu	Gly

115 120 125  
 Ile Ala Ser Cys Trp Ile Asn Gln Leu Gly Thr Thr Cys Asp Asp Pro  
 130 135 140  
 Glu Val Arg Ala Tyr Leu Thr Ser Leu Gly Val Pro Glu Asn His Lys  
 145 150 155 160  
 Val Tyr Gly Cys Val Ala Leu Gly Tyr Lys Ala Glu Gly Ala Leu Leu  
 165 170 175  
 Lys Glu Lys Thr Val Lys Ala Gly Thr Ile Thr Ile Val Glu  
 180 185 190

<210> 8636  
 <211> 240  
 <212> PRT  
 <213> B.fragilis

<400> 8636  
 Ile Glu Phe Ala Lys Met Ile Arg Ser Lys Met Lys Ser Thr Trp Met  
 1 5 10 15  
 Leu Gly Leu Leu Leu Leu Gly Ser Cys Gln Gln Lys Gly Pro Ala  
 20 25 30  
 Ser Gly Arg Ala Glu Met Lys Gly Glu Ser Asp Ser Leu Ser Val Arg  
 35 40 45  
 His Gly Gln Glu Asn Ala Leu Ser Val Ser Asp Glu Tyr Pro Glu Gly  
 50 55 60  
 Tyr Val Pro Val Pro Gly Ile Arg Tyr Gln Ala Asn Tyr Leu Thr Gly  
 65 70 75 80  
 Asn Pro Glu Arg Leu Asp Val Lys Ala Ala Leu Arg Asn Val Arg Pro  
 85 90 95  
 Leu Lys Leu Ser Gln Leu Gly Ser Gln Leu Asp Phe Met Val Phe Lys  
 100 105 110  
 Asp Val Lys Gly Gly Ile Phe Arg Leu Ile Pro Ile Glu Glu Gly Cys  
 115 120 125  
 Leu Gly Val Gly Ile Gly Gly Ile Trp Leu Leu Asp Gly Asn Leu Lys  
 130 135 140  
 Met Ile Arg Met Leu Phe Arg Asn Asp Val Asp Ile Thr Glu Glu Asn  
 145 150 155 160  
 Gly Phe Thr Asn Phe Gln Thr Lys Arg Tyr Ile Asn Pro Asp Tyr Tyr  
 165 170 175  
 Glu Lys Ser Ser Arg Thr Leu Ile Gly Val Leu Tyr Asp Gln Arg Asp  
 180 185 190  
 Lys Lys Asn Pro Lys Ser Phe Val Arg Leu Ser Leu Lys Asp Leu Leu  
 195 200 205  
 Ser Ala Ser Arg Pro Leu Thr Pro Asp Asp Ile His Lys Arg Ala Gly  
 210 215 220  
 Ser Ser Pro Arg Gly Trp Lys Asn Ala Ala Ser Ser Gln Leu Lys Pro  
 225 230 235 240

<210> 8637  
 <211> 305  
 <212> PRT  
 <213> B.fragilis

<400> 8637  
 Tyr Glu Leu Tyr Leu Ser Ile Val Asn Asp Tyr Ile Asn Val Glu Phe  
 1 5 10 15  
 Lys Glu Glu Pro Leu Met Lys Lys Gln Tyr Val Ser Leu Leu Ala Ile  
 20 25 30  
 Ile Leu Ala Thr Ser Gly Phe Leu Phe Ser Cys Gly Asp Lys Met Asn  
 35 40 45

Lys Asn Thr Gly Ala Leu Glu Phe Asp Ser Ile Gln Val Asn Glu Thr  
 50 55 60  
 Ala His Leu Phe Gly Asp Thr Ala Lys Pro Ala Cys Asn Leu Thr Ile  
 65 70 75 80  
 Asn Phe Ala Tyr Pro Val Lys Ser Thr Asp Asn Lys Leu Lys Asp Ser  
 85 90 95  
 Leu Asn Ser Tyr Phe Ile Ala Ala Cys Phe Gly Glu Gly Tyr Ile Gly  
 100 105 110  
 Glu Lys Pro Ala Gln Val Val Lys Glu Tyr Thr Glu His Tyr Val Lys  
 115 120 125  
 Glu Tyr Arg Thr Asp Leu Glu Pro Met Tyr Ala Glu Asp Glu Lys Asn  
 130 135 140  
 Lys Glu Ser Glu Gly Ser Ile Gly Ala Trp Tyr Ser Tyr Tyr Lys Gly  
 145 150 155 160  
 Ile Glu Ser His Val Gln Leu Tyr Tyr Lys Asn Leu Leu Val Tyr Arg  
 165 170 175  
 Ile Asn Tyr Asn Glu Tyr Thr Gly Gly Ala His Gly Ile Tyr Met Thr  
 180 185 190  
 Thr Phe Leu Asn Met Asp Leu Ile Asn Leu Arg Pro Leu Lys Leu Asp  
 195 200 205  
 Asp Ile Phe Thr Gly Asp Tyr Lys Glu Ala Leu Thr Asp Leu Leu Trp  
 210 215 220  
 Asn Gln Leu Met Ala Asp Lys Lys Val Thr Thr His Glu Ala Leu Glu  
 225 230 235 240  
 Asp Met Gly Tyr Gly Ser Thr Gly Asp Ile Ala Pro Thr Glu Asn Phe  
 245 250 255  
 Tyr Leu Asp Lys Asp Gly Ile Thr Phe Tyr Tyr Asn Val Tyr Asp Ile  
 260 265 270  
 Thr Pro Tyr Ala Met Gly Pro Val Glu Ile Lys Ile Pro Tyr Glu Met  
 275 280 285  
 Met Glu His Met Leu Gly Ser Asn Pro Ile Ile Gly Glu Met Lys Ser  
 290 295 300

Lys  
 305

<210> 8638  
 <211> 671  
 <212> PRT  
 <213> B.fragilis

<400> 8638  
 Thr Ile His Lys Leu Gln Lys Thr Ile Met Lys Gln Glu Glu Asp Lys  
 1 5 10 15  
 Phe Thr Gly Leu Pro Glu Asn Ala Phe Arg Glu Leu Lys Pro Gly Glu  
 20 25 30  
 Val Tyr Asn Pro Leu Met Ser Pro Lys Lys Thr Tyr Pro Glu Val Asn  
 35 40 45  
 Leu Trp Ser Val Ala Trp Gly Ile Ala Met Ala Ile Leu Phe Ser Ala  
 50 55 60  
 Ala Ala Ala Tyr Leu Gly Leu Lys Val Gly Gln Val Phe Glu Ala Ala  
 65 70 75 80  
 Ile Pro Ile Ala Ile Ala Val Gly Val Ser Gly Ala Ala Lys Arg  
 85 90 95  
 Lys Asn Ala Leu Gly Glu Asn Val Ile Ile Gln Ser Ile Gly Ala Cys  
 100 105 110  
 Ser Gly Val Ile Val Ala Gly Ala Ile Phe Thr Leu Pro Ala Leu Tyr  
 115 120 125  
 Ile Leu Gln Ala Lys Tyr Pro Asp Met Ser Val Thr Phe Met Gln Val  
 130 135 140

Phe	Ile	Ser	Ser	Leu	Leu	Gly	Gly	Val	Leu	Gly	Ile	Leu	Phe	Leu	Ile
145					150					155					160
Pro	Phe	Arg	Lys	Tyr	Phe	Val	Ser	Asp	Met	His	Gly	Lys	Tyr	Pro	Phe
				165					170						175
Pro	Glu	Ala	Thr	Ala	Thr	Thr	Gln	Val	Leu	Val	Ser	Gly	Glu	Lys	Gly
			180					185							190
Gly	Ser	Gln	Ala	Lys	Pro	Leu	Leu	Met	Ala	Gly	Leu	Ile	Gly	Gly	Leu
		195					200					205			
Tyr	Asp	Phe	Ile	Val	Ala	Thr	Phe	Gly	Trp	Trp	Asn	Glu	Asn	Phe	Thr
	210					215					220				
Thr	Arg	Val	Cys	Gly	Val	Gly	Glu	Met	Leu	Ala	Asp	Lys	Ala	Lys	Leu
225					230					235					240
Val	Phe	Lys	Val	Asn	Thr	Gly	Ala	Ala	Val	Leu	Gly	Leu	Gly	Tyr	Ile
				245					250						255
Val	Gly	Leu	Lys	Tyr	Ala	Ser	Ile	Ile	Cys	Phe	Gly	Ser	Leu	Ala	Val
			260					265							270
Trp	Trp	Ile	Ile	Val	Pro	Gly	Met	Ser	Leu	Phe	Phe	Gly	Asp	Ser	Val
		275					280						285		
Leu	Asn	Gln	Trp	Asn	Pro	Asp	Ile	Thr	Ala	Thr	Val	Gly	Ser	Met	Ser
	290					295						300			
Pro	Glu	Gln	Ile	Phe	Ser	His	Tyr	Ala	Lys	Ser	Ile	Gly	Ile	Gly	Gly
305					310					315					320
Ile	Ala	Met	Ala	Gly	Val	Ile	Gly	Ile	Ile	Lys	Ser	Trp	Ser	Ile	Ile
				325					330						335
Arg	Ser	Ala	Val	Gly	Leu	Ala	Ala	Lys	Glu	Met	Gly	Gly	Lys	Ser	Asp
			340					345							350
Ala	Glu	Lys	Asn	Ile	Ile	Arg	Thr	Gln	Arg	Asp	Leu	Ser	Met	Lys	Ile
		355					360						365		
Ile	Ala	Ile	Gly	Ser	Ile	Ile	Thr	Leu	Ile	Leu	Val	Val	Leu	Phe	Phe
	370					375					380				
Tyr	Phe	Asp	Val	Met	Gln	Gly	Asn	Leu	Val	His	Thr	Leu	Val	Ala	Ile
385					390					395					400
Leu	Leu	Val	Ala	Gly	Ile	Ser	Phe	Leu	Phe	Thr	Thr	Val	Ala	Ala	Asn
				405					410						415
Ala	Ile	Ala	Ile	Val	Gly	Thr	Asn	Pro	Val	Ser	Gly	Met	Thr	Leu	Met
			420					425					430		
Thr	Leu	Ile	Leu	Ala	Ser	Val	Val	Met	Val	Ala	Val	Gly	Leu	Lys	Gly
		435					440						445		
Pro	Ser	Gly	Met	Val	Ala	Ser	Leu	Val	Met	Gly	Gly	Val	Val	Cys	Thr
						455					460				
Ala	Leu	Ser	Met	Ala	Gly	Gly	Phe	Ile	Thr	Asp	Leu	Lys	Ile	Gly	Tyr
465					470					475					480
Trp	Leu	Gly	Ser	Thr	Pro	Ala	Lys	Gln	Glu	Ala	Trp	Lys	Phe	Leu	Gly
			485						490						495
Thr	Ile	Val	Ser	Ala	Ala	Thr	Val	Gly	Gly	Val	Met	Ile	Ile	Leu	Asn
			500					505					510		
Lys	Thr	Tyr	Gly	Phe	Thr	Ser	Gly	Gln	Leu	Ala	Ala	Pro	Gln	Ala	Asn
		515					520						525		
Ala	Met	Ala	Ala	Val	Ile	Glu	Pro	Leu	Met	Ser	Gly	Val	Gly	Ala	Pro
	530					535					540				
Trp	Met	Leu	Tyr	Gly	Ile	Gly	Ala	Val	Leu	Ala	Ile	Val	Leu	Thr	Leu
545					550					555					560
Leu	Lys	Val	Pro	Ala	Leu	Ala	Phe	Ala	Leu	Gly	Met	Phe	Ile	Pro	Leu
				565					570						575
Glu	Leu	Asn	Ile	Pro	Leu	Val	Val	Gly	Gly	Ala	Ile	Asn	Trp	Tyr	Val
			580					585					590		
Thr	Thr	Arg	Ser	Lys	Asp	Ala	Ser	Leu	Asn	Thr	Glu	Arg	Gly	Glu	Lys
		595				600						605			
Gly	Thr	Leu	Leu	Ala	Ser	Gly	Phe	Ile	Ala	Gly	Gly	Ala	Leu	Met	Gly

145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605

610	615	620
Val Val Ser Ala Ala Met Arg Phe Gly Gly Ile Asn Leu Val Asn Asp		
625	630	635
Ala Trp Leu Asn Asn Thr Leu Ser Gln Leu Ala Ala Leu Ile Ala Tyr		640
	645	650
Thr Leu Leu Ile Leu Tyr Phe Ile Lys Ala Ser Met Lys Val Lys		655
	660	665
		670

<210> 8639  
 <211> 953  
 <212> PRT  
 <213> B.fragilis

<400> 8639

Ile Ile Asn Asn Met Lys Thr Asp Leu Leu Ala Cys Arg His Ile Gly		
1	5	10
Val Asn Lys Ala Asp Ala Glu Val Met Leu Arg Lys Ile Gly Val Ala		
	20	25
Ser Leu Asp Glu Leu Ile Asp Lys Thr Ile Pro Ala Asn Ile Arg Leu		30
	35	40
Lys Ala Pro Leu Ala Leu Pro Ala Pro Met Thr Glu Tyr Glu Phe Ala		45
	50	55
Arg His Ile Ala Glu Leu Ala Gly Lys Asn Lys Leu Phe Thr Thr Tyr		60
65	70	75
Ile Gly Met Gly Trp Tyr Asn Thr Ile Thr Pro Ala Val Ile Gln Arg		80
	85	90
Asn Val Phe Glu Asn Pro Val Trp Tyr Thr Ser Tyr Thr Pro Tyr Gln		95
	100	105
Thr Glu Val Ser Gln Gly Arg Leu Glu Ala Leu Met Asn Phe Gln Thr		110
	115	120
Ala Val Cys Asp Leu Thr Ala Met Pro Leu Ala Asn Cys Ser Leu Leu		125
	130	135
Asp Glu Ala Thr Ala Ala Ala Glu Ala Val Thr Met Met Tyr Gly Leu		140
145	150	155
Arg Ser Arg Asn Gln Gln Lys Ala Gly Ala Asn Val Val Phe Ile Asp		160
	165	170
Glu Asn Ile Phe Pro Gln Thr Leu Ala Val Ile Thr Thr Arg Ala Ile		175
	180	185
Pro Gln Gly Ile Glu Ile Arg Thr Gly Lys Phe Arg Asp Leu Glu Phe		190
	195	200
Thr Asp Asp Phe Phe Ala Cys Val Leu Gln Tyr Pro Asn Ala Asn Gly		205
	210	215
Asn Ala Glu Asp Tyr Arg Glu Phe Thr Glu Lys Ala His Thr Ala Asn		220
225	230	235
Cys Lys Val Ala Val Ala Ala Asp Ile Leu Ser Leu Ala Leu Leu Thr		240
	245	250
Pro Pro Gly Glu Trp Gly Ala Asp Ile Val Phe Gly Thr Thr Gln Arg		255
	260	265
Leu Gly Thr Pro Met Phe Tyr Gly Gly Pro Ser Ala Gly Tyr Phe Ala		270
	275	280
Thr Arg Asp Glu Tyr Lys Arg Asn Met Pro Gly Arg Ile Ile Gly Trp		285
	290	295
Ser Lys Asp Lys Tyr Gly Lys Leu Cys Tyr Arg Met Ala Leu Gln Thr		300
305	310	315
Arg Glu Gln His Ile Lys Arg Glu Lys Ala Thr Ser Asn Ile Cys Thr		320
	325	330
Ala Gln Ala Leu Leu Ala Thr Met Ala Gly Phe Tyr Thr Val Tyr His		335
	340	345
Gly Gln Glu Gly Ile Arg Asn Ile Ala Ser Arg Ile His Ser Ile Thr		350

		355					360					365				
Val	Phe	Leu	Glu	Lys	Ser	Ile	Gly	Lys	Leu	Gly	Phe	Lys	Gln	Val	Asn	
	370					375					380					
Lys	Gln	Tyr	Phe	Asp	Thr	Leu	Arg	Phe	Ile	Leu	Pro	Asp	Ser	Val	Ser	
385					390					395					400	
Ala	Gln	Gln	Ile	Arg	Thr	Ile	Ala	Leu	Ser	Lys	Glu	Val	Asn	Leu	Arg	
				405					410					415		
Tyr	Phe	Asp	Asn	Gly	Asp	Val	Gly	Leu	Ser	Ile	Asp	Glu	Thr	Thr	Asp	
			420				425					430				
Val	Ala	Ala	Ala	Asn	Ile	Leu	Leu	Ser	Ile	Phe	Ala	Ile	Ala	Ala	Gly	
		435					440					445				
Lys	Asp	Phe	Gln	Lys	Val	Asp	Asp	Ile	Pro	Glu	Ala	Thr	Ile	Ile	Ser	
	450					455					460					
Glu	Glu	Leu	Lys	Arg	Gln	Thr	Pro	Tyr	Leu	Thr	His	Glu	Val	Phe	Ser	
465					470					475					480	
Lys	Tyr	His	Thr	Glu	Thr	Glu	Met	Met	Arg	Tyr	Ile	Lys	Arg	Leu	Asp	
				485					490					495		
Arg	Lys	Asp	Ile	Ser	Leu	Ala	Gln	Ser	Met	Ile	Ser	Leu	Gly	Ser	Cys	
			500					505					510			
Thr	Met	Lys	Leu	Asn	Ala	Ala	Ala	Glu	Met	Leu	Pro	Leu	Ser	Cys	Ala	
		515					520					525				
Glu	Phe	Met	Cys	Met	His	Pro	Leu	Val	Pro	Glu	Asp	Gln	Ala	Ala	Gly	
	530					535					540					
Tyr	Arg	Glu	Leu	Ile	His	Asn	Leu	Ser	Glu	Glu	Leu	Lys	Val	Ile	Thr	
545					550					555					560	
Gly	Phe	Ala	Gly	Val	Ser	Leu	Gln	Pro	Asn	Ser	Gly	Ala	Ala	Gly	Glu	
				565					570					575		
Tyr	Ala	Gly	Leu	Arg	Thr	Ile	Arg	Ala	Tyr	Leu	Glu	Ser	Ile	Gly	Gln	
			580					585					590			
Gly	His	Arg	Asn	Lys	Val	Leu	Ile	Pro	Ala	Ser	Ala	His	Gly	Thr	Asn	
		595					600					605				
Pro	Ala	Ser	Ala	Ile	Gln	Ala	Gly	Phe	Thr	Thr	Val	Thr	Cys	Ala	Cys	
	610					615					620					
Asp	Glu	His	Gly	Asn	Val	Asp	Met	Asp	Asp	Leu	Arg	Ala	Lys	Ala	Glu	
625					630					635					640	
Glu	Asn	Lys	Asp	Asp	Leu	Ala	Ala	Leu	Met	Ile	Thr	Tyr	Pro	Ser	Thr	
				645					650					655		
His	Gly	Ile	Phe	Glu	Thr	Glu	Ile	Val	Glu	Ile	Cys	Gln	Ile	Ile	His	
			660					665					670			
Ala	Cys	Gly	Ala	Gln	Val	Tyr	Met	Asp	Gly	Ala	Asn	Met	Asn	Ala	Gln	
		675					680					685				
Val	Gly	Leu	Thr	Asn	Pro	Gly	Phe	Ile	Gly	Ala	Asp	Val	Cys	His	Leu	
	690					695					700					
Asn	Leu	His	Lys	Thr	Phe	Ala	Ser	Pro	His	Gly	Gly	Gly	Gly	Pro	Gly	
705					710											



Met Asp Tyr Gly Tyr His Ala Pro Thr Leu Ser Phe Pro Val His Gly  
 835 840 845  
 Thr Leu Met Ile Glu Pro Thr Glu Ser Glu Ser Leu Ser Glu Leu Asp  
 850 855 860  
 Asn Phe Val Leu Thr Met Leu Thr Ile Trp Asn Glu Ile Gln Glu Val  
 865 870 875 880  
 Lys Asn Gly Glu Ala Asp Lys Glu Asp Asn Val Leu Ile Asn Ala Pro  
 885 890 895  
 His Pro Glu Tyr Glu Val Val Ser Asp Gln Trp Glu His Cys Tyr Thr  
 900 905 910  
 Arg Glu Lys Ala Ala Tyr Pro Ile Glu Ser Val Arg Glu Asn Lys Phe  
 915 920 925  
 Trp Val Asn Val Ala Arg Val Asp Asn Thr Leu Gly Asp Arg Lys Leu  
 930 935 940  
 Leu Pro Thr Cys Tyr Gly Cys Phe Asp  
 945 950

<210> 8640

<211> 737

<212> PRT

<213> B.fragilis

<400> 8640

Ile Met Ser Asn Ile Thr Lys Lys Ala Phe Pro Val Leu Asn Met His  
 1 5 10 15  
 Cys Ala Gly Cys Ala Asn Asn Val Glu Lys Thr Val Lys Lys Leu Ala  
 20 25 30  
 Gly Val Val Asp Ala Ser Val Asn Phe Ala Thr Asn Thr Leu Ser Val  
 35 40 45  
 Ser Tyr Glu Ala Asp Lys Leu Thr Pro Gly Glu Ile Arg Ala Ala Val  
 50 55 60  
 Leu Ala Ala Gly Tyr Asp Leu Ile Val Glu Glu Ala Leu Lys Glu Glu  
 65 70 75 80  
 Arg Gln Glu Glu Ala Gln Glu Lys His Tyr Arg Leu Leu Lys Arg Gln  
 85 90 95  
 Val Ile Gly Ala Trp Ile Phe Val Val Pro Met Leu Leu Phe Ser Met  
 100 105 110  
 Val Leu Met His Val Pro Phe Ser Asn Glu Ile Gln Leu Ile Leu Ala  
 115 120 125  
 Leu Pro Val Met Ile Phe Phe Gly Gly Ser Phe Tyr Val Asn Ala Trp  
 130 135 140  
 Arg Gln Ala Arg Leu Gly Arg Ser Asn Met Asp Thr Leu Val Ala Leu  
 145 150 155 160  
 Ser Thr Ser Ile Ala Phe Leu Phe Ser Val Phe Asn Thr Phe Phe Pro  
 165 170 175  
 Glu Phe Trp Tyr Ser Arg Gly Leu Glu Pro His Val Tyr Tyr Glu Ala  
 180 185 190  
 Ala Val Val Ile Ile Ala Phe Val Leu Thr Gly Lys Leu Met Glu Glu  
 195 200 205  
 Arg Ala Lys Gly Asn Thr Ser Thr Ala Ile Arg Lys Leu Met Gly Leu  
 210 215 220  
 Gln Pro Arg Val Ala Arg Val Leu Arg Glu Gly Ile Glu Glu Asp Ile  
 225 230 235 240  
 Leu Ile Asp Gln Leu Gln Thr Gly Asp Leu Val Val Val Arg Pro Gly  
 245 250 255  
 Glu Gln Ile Pro Val Asp Gly Arg Leu Ser Glu Gly Glu Ser Tyr Val  
 260 265 270  
 Asp Glu Ser Met Ile Ser Gly Glu Pro Ile Pro Val Glu Lys Lys Val  
 275 280 285

Gly Asp Arg Val Leu Ala Gly Thr Ile Asn Gln Lys Gly Ala Phe Val  
 290 295 300  
 Ile Lys Ala Ser Gly Val Gly Ser Glu Thr Val Leu Ala Arg Ile Ile  
 305 310 315 320  
 Arg Met Val Gln Glu Ala Gln Gly Ser Lys Ala Pro Val Gln Arg Ile  
 325 330 335  
 Val Asp Arg Val Thr Gly Ile Phe Val Pro Val Val Leu Cys Ile Ala  
 340 345 350  
 Val Leu Thr Phe Val Ile Trp Leu Leu Val Gly Gly Thr Asp Tyr Phe  
 355 360 365  
 Ser His Ala Leu Leu Ser Ala Val Ser Val Leu Val Ile Ala Cys Pro  
 370 375 380  
 Cys Ala Leu Gly Leu Ala Thr Pro Thr Ala Leu Met Val Gly Ile Gly  
 385 390 395 400  
 Lys Ala Ala Ser Asn His Ile Leu Ile Lys Asp Ala Val Ala Leu Glu  
 405 410 415  
 Gln Met Arg Lys Val Asp Val Val Val Leu Asp Lys Thr Gly Thr Leu  
 420 425 430  
 Thr Glu Gly His Pro Thr Val Ser Gly Trp Leu Trp Ala Gln Val Gln  
 435 440 445  
 Glu Glu His Phe Lys Asn Val Leu Leu Ala Ala Glu Leu Lys Ser Glu  
 450 455 460  
 His Pro Leu Ala Gly Ala Ile Val Ser Ser Leu Gln Glu Val Glu Lys  
 465 470 475 480  
 Ile Val Pro Ala Gln Leu Glu Ser Phe Glu Ser Ile Thr Gly Lys Gly  
 485 490 495  
 Ile Lys Val Val Tyr Gln Gly Asp Thr Tyr Trp Val Gly Ser His Lys  
 500 505 510  
 Leu Leu Lys Asp Phe Ser Ala Ser Leu Ser Asp Val Leu Ala Glu Met  
 515 520 525  
 Met Val Gln Tyr Glu Ser Asp Gly Asn Ser Ile Val Tyr Phe Gly Arg  
 530 535 540  
 Gly Thr Glu Val Leu Ala Val Val Ala Ile Ala Asp Gln Ile Lys Pro  
 545 550 555 560  
 Thr Ser Ala Glu Ala Val Lys Glu Leu Lys Arg Gln Gly Ile Asp Ile  
 565 570 575  
 Cys Met Leu Thr Gly Asp Gly Gln Arg Thr Ala Leu Ala Val Ser Gly  
 580 585 590  
 Lys Leu Gly Ile Asp Arg Phe Val Ala Asp Ala Leu Pro Asp Asp Lys  
 595 600 605  
 Glu Glu Phe Val Arg Glu Leu Gln Met Gln Gly Lys Thr Val Ala Met  
 610 615 620  
 Val Gly Asp Gly Ile Asn Asp Ser Gln Ala Leu Ala Leu Ala Asp Val  
 625 630 635 640  
 Ser Ile Ala Met Gly Lys Gly Thr Asp Ile Ala Met Asp Val Ala Met  
 645 650 655  
 Val Thr Leu Met Thr Ser Asp Leu Leu Leu Leu Pro Arg Ala Phe Glu  
 660 665 670  
 Leu Ser Lys Gln Thr Val Lys Leu Ile His Gln Asn Leu Phe Trp Ala  
 675 680 685  
 Phe Ile Tyr Asn Leu Ile Gly Ile Pro Ile Ala Ala Gly Ile Leu Phe  
 690 695 700  
 Pro Val Asn Gly Leu Leu Leu Asn Pro Met Leu Ala Ser Ala Ala Met  
 705 710 715 720  
 Ala Phe Ser Ser Val Ser Val Val Leu Asn Ser Leu Ser Leu Ala Arg  
 725 730 735  
 Lys

<210> 8641  
 <211> 214  
 <212> PRT  
 <213> B.fragilis

<400> 8641

Phe Val Arg Lys Arg Ala Val Phe Val Arg Tyr Arg Thr Gln Ile Thr  
 1 5 10 15  
 Gln Thr Phe Ser Leu Ser Leu Ser Cys Gln Ser Thr Tyr Tyr Thr Met  
 20 25 30  
 Thr Leu Lys Arg Gly Lys Ile Leu Ile Ala Asp Asp Asn Glu Asp Ile  
 35 40 45  
 Leu Phe Thr Leu Lys Met Leu Leu Arg Pro Ile Ala Glu Ser Ile Ser  
 50 55 60  
 Ile Thr Thr Asp Pro Arg Glu Leu Leu Pro Ile Leu Ser Arg Thr His  
 65 70 75 80  
 Tyr Asp Val Ile Leu Leu Asp Met Asn Phe Arg Asn Asp Ala Val Ser  
 85 90 95  
 Gly Arg Glu Gly Phe His Trp Leu Glu Glu Ile Leu Lys Leu Asp Ser  
 100 105 110  
 Gly Ala Val Val Ile Phe Ile Thr Ala Tyr Ala Asp Thr Glu Lys Ala  
 115 120 125  
 Val Arg Thr Ile Lys Leu Gly Ala Thr Asp Phe Ile Ala Lys Pro Trp  
 130 135 140  
 Gln Asn Asp Lys Met Ile Ala Thr Arg Ile Cys Gly Ile Ala Thr Gln  
 145 150 155 160  
 Leu Gln Pro Tyr Gly Ser Arg Ile Thr Glu Gly Ala Glu Arg Ser Ser  
 165 170 175  
 Asp Arg Pro Leu Ala Gly Thr Gly Pro Asn His Arg Arg Ile Gly Arg  
 180 185 190  
 His Ala Gly Tyr Phe Pro Asp His Pro Glu Ile Cys Arg Tyr Gly Arg  
 195 200 205  
 Gln Ser Val Ala Phe Arg  
 210

<210> 8642  
 <211> 132  
 <212> PRT  
 <213> B.fragilis

<400> 8642

Lys Met Lys Lys Ile Leu Phe Phe Ile Thr Met Met Val Leu Ser Ile  
 1 5 10 15  
 Gly Leu Ala Gln Ala Gln Gly Lys Ala Glu Ile Lys Phe Asp Lys Thr  
 20 25 30  
 Thr His Asp Phe Gly Thr Phe Ser Glu Asn Asn Pro Val Val Ser Cys  
 35 40 45  
 Thr Phe Lys Phe Thr Asn Ile Gly Asp Ala Pro Leu Val Ile His Gln  
 50 55 60  
 Ala Val Ala Ser Cys Gly Cys Thr Val Pro Glu Tyr Thr Gln Glu Pro  
 65 70 75 80  
 Ile Met Pro Gly Lys Thr Gly Thr Ile Lys Val Thr Tyr Asn Gly Thr  
 85 90 95  
 Asp Lys Tyr Pro Gly His Phe Lys Lys Ser Ile Thr Leu Arg Thr Asn  
 100 105 110  
 Ala Lys Thr Glu Met Ile Arg Leu Phe Val Glu Gly Asp Met Thr Ala  
 115 120 125  
 Lys Asp Ala Lys  
 130

<210> 8643  
 <211> 318  
 <212> PRT  
 <213> B.fragilis

<400> 8643

Arg Val Ala Glu Gln His Ser Val Ser Thr Cys Gly Pro Asp Ser Leu  
 1 5 10 15  
 Tyr Pro Val Asp Ser Leu Phe His Gln Ser Ile His Glu Ser Lys Met  
 20 25 30  
 Lys Thr Leu Ile Thr Ser Ile Leu Phe Met Ala Thr Gly Leu Ser  
 35 40 45  
 Ala Gln Lys Pro Val Glu Leu Pro Leu Trp Pro Asn Gly Ala Pro Asn  
 50 55 60  
 Asp Asn Gly Leu Lys Gly Glu Glu Val Met Ser Ala Pro Tyr Arg Leu  
 65 70 75 80  
 Thr Asn Val Thr Gln Pro Thr Ile Thr Val Tyr Arg Pro Ala Thr Pro  
 85 90 95  
 Asn Gly Met Thr Ile Ile Met Cys Pro Gly Gly Ala Tyr Ala Leu Leu  
 100 105 110  
 Ala Met Asp His Glu Gly His Asp Met Ala Pro Trp Phe Asn Ser Leu  
 115 120 125  
 Gly Ile Thr Tyr Val Val Leu Lys Tyr Arg Met Pro Asn Gly His Cys  
 130 135 140  
 Glu Val Pro Leu Ser Asp Ala Glu Gln Ala Ile Arg Ile Val Arg Lys  
 145 150 155 160  
 His Ala Lys Asp Trp Asn Ile Arg Thr Asp Arg Val Gly Ile Met Gly  
 165 170 175  
 Ala Ser Ala Gly Gly His Leu Ala Ser Thr Leu Ala Thr His Tyr Ser  
 180 185 190  
 Ser Glu Asp Thr Arg Pro Asp Phe Gln Ile Leu Leu Tyr Pro Val Ile  
 195 200 205  
 Thr Met Glu Ser Gly Asp Thr His Gly Gly Ser Arg His Asn Leu Leu  
 210 215 220  
 Gly Pro Asp Ala Thr Pro Glu Leu Thr Arg Lys Phe Ser Asn Glu Gln  
 225 230 235 240  
 Gln Val Thr Asp His Thr Pro Gln Ala Phe Ile Thr Leu Ser Ser Asp  
 245 250 255  
 Asp Glu Gly Val Pro Pro Ala Asn Gly Val Asn Tyr Tyr Leu Ala Leu  
 260 265 270  
 Gln Lys His Lys Val Pro Ala Thr Leu His Ile Tyr Pro Thr Gly Gly  
 275 280 285  
 His Gly Trp Gly Phe Tyr Asp Ser Phe Ala Tyr Lys Arg Gln Trp Thr  
 290 295 300  
 Glu Glu Leu Glu Lys Trp Leu Arg Asp Gly Val Arg Phe Gln  
 305 310 315

<210> 8644  
 <211> 145  
 <212> PRT  
 <213> B.fragilis

<400> 8644

Leu Asp His Asp Met Gly Ala Gly Ser Trp Ser Glu Arg Leu Tyr Arg  
 1 5 10 15  
 Ser Gln Val Gln Ser Gly Glu Arg Leu Arg Ile Lys Ser Asp Arg Ser  
 20 25 30  
 Gln Asn Leu Ser Ile Leu Ile Leu Thr Phe Met Lys Thr Lys Lys Met

35 40 45  
 Ile Ala Thr Leu Val Val Ala Leu Leu Ser Val Thr Ala Val Met Ala  
 50 55 60  
 Lys Asp Phe Arg Thr Val Val Phe Lys Val Ala Gln Met Glu Cys Ala  
 65 70 75 80  
 Asn Cys Glu Arg Lys Val Lys Asn Asn Ile Lys Phe Glu Lys Gly Leu  
 85 90 95  
 Lys Asn Phe Thr Thr Asp Leu Lys Glu Arg Thr Val Thr Ile Thr Tyr  
 100 105 110  
 Asp Ala Glu Lys Thr Asn Val Glu Lys Leu Lys Glu Gly Phe Arg Lys  
 115 120 125  
 Phe Lys Tyr Glu Ala Val Val Ile Lys Glu Ala Lys Glu Thr Asp Lys  
 130 135 140  
 Lys  
 145

<210> 8645  
 <211> 106  
 <212> PRT  
 <213> B.fragilis

<400> 8645  
 Ala Phe Thr Glu Tyr Ala Tyr Val Phe Ser Asn Tyr Leu Tyr Met Phe  
 1 5 10 15  
 Ser Tyr Phe Thr Ser Ile Val Arg Val Ser Glu Val Lys Arg Lys Arg  
 20 25 30  
 Leu Phe Ser Gly Cys Thr Pro Glu Ala Asp Lys Ser Glu Leu Thr Glu  
 35 40 45  
 Arg Glu Pro His Ala Leu Ile Thr His Leu Phe Ile Pro Ile Ala Ser  
 50 55 60  
 Arg His Arg His Tyr Asp Ser Leu Gln Arg His Leu Ile Ser Lys Thr  
 65 70 75 80  
 Lys Ser Pro Thr Arg Lys Glu Gly Asp Phe Ile Arg Ser Val His His  
 85 90 95  
 Trp Ala Glu Ile Glu Gln Ser Arg Glu Val  
 100 105

<210> 8646  
 <211> 282  
 <212> PRT  
 <213> B.fragilis

<400> 8646  
 Arg Asn Gly Cys Gly Thr Glu Ser Gly Ser Asn Arg Tyr Asn Glu Gly  
 1 5 10 15  
 Ile Thr Lys Thr Ile Phe Ile Lys Met Lys Thr Ile Arg Thr Leu Leu  
 20 25 30  
 Leu Cys Thr Ser Leu Leu Ala Gly Thr Val Ala Ala Gln Glu Ser Ser  
 35 40 45  
 Leu Val Leu Ser Asn Gly Leu Gly Phe Val Asp Thr Pro Tyr Lys Ala  
 50 55 60  
 Gly Thr Leu Glu Val Asp Thr Glu Asp Leu Ile Ile Asn Cys Asp  
 65 70 75 80  
 Glu Val Asp Cys Thr Phe Val Glu Tyr Ala Leu Ala Met Ala Leu  
 85 90 95  
 Cys Pro Gln Gln Gly Asp Glu Met Gln Glu Gly Asp Phe Ala Arg Asn  
 100 105 110  
 Leu Gln Arg Ile Arg Tyr Arg Asp Gly Lys Ile Asp Gly Tyr Thr Ser  
 115 120 125

[illegible]

<400> 8647

Pro	Gln	Lys	Cys	Trp	Glu	Ser	Pro	Gly	His	Arg	Tyr	Thr	Gly	Gly	Ser
1				5					10					15	
Arg	Asn	Thr	Asp	Tyr	Asn	Leu	Lys	Gln	Leu	His	Asp	Met	Lys	Gln	Lys
			20					25					30		
Trp	Ala	Arg	Lys	Pro	Leu	Ile	Leu	Thr	Ala	Ala	Leu	Leu	Ile	Cys	Cys
		35					40					45			
Tyr	Thr	Thr	Val	Trp	Leu	Gly	Met	His	Gly	Phe	Tyr	Ile	Ser	Leu	Pro
	50					55				60					
Val	Ser	Val	Cys	Leu	Leu	Leu	Tyr	Thr	Ala	Tyr	Arg	Ile	Tyr	Arg	Tyr
65				70					75					80	
Ile	Leu	Arg	Ser	Thr	Arg	Ala	Met	Ala	Gln	Phe	Ile	Trp	Ser	Val	Arg
				85				90						95	
Tyr	Ser	Glu	Phe	Leu	Ser	Ser	Pro	Val	Gln	Ser	Glu	Glu	Ser	Leu	Arg
		100					105					110			
Ser	Leu	Pro	Ala	Glu	Leu	Leu	Asn	Glu	Met	Asn	Gln	Ala	Leu	Asp	Phe
		115					120				125				
Tyr	Lys	Gln	Asn	Leu	Gln	Lys	Lys	Glu	Ser	Lys	Leu	Gln	Tyr	Phe	Gln
	130					135				140					
Ala	Leu	Ala	Asn	His	Ile	Asp	Met	Ser	Val	Leu	Val	Tyr	Thr	Pro	Ser
145				150					155					160	
Gly	Arg	Ile	Glu	Trp	Met	Asn	Glu	Ala	Ala	Lys	Arg	Leu	Leu	Asp	Asn
			165				170						175		
His	Asn	Leu	Lys	Ser	Ile	Asp	Glu	Leu	Lys	Tyr	Phe	His	Ser	Glu	Leu
		180					185					190			
Pro	Ala	Arg	Leu	Tyr	Ser	Leu	Lys	Ala	Gly	Asp	Ile	Ala	Val	Leu	Gln
	195						200				205				
Ala	Lys	Lys	Glu	Glu	Glu	Thr	Ile	Gln	Leu	Ala	Leu	Ser	Gly	Met	Glu
	210					215				220					
Phe	Val	Ile	Gln	Gly	Arg	Pro	Leu	Thr	Val	Ala	Ser	Met	Lys	Asn	Ile
225				230					235					240	
His	Ser	Val	Leu	Asp	Ser	Gln	Glu	Thr	Glu	Ala	Trp	Gln	Lys	Leu	Ile
			245					250					255		

Arg Val Leu Thr His Glu Ile Met Asn Ser Ile Thr Pro Val Thr Ser  
 260 265 270  
 Leu Ser Glu Leu Leu Glu His Gln Ile Glu Asp Phe Asp Gly Asn Glu  
 275 280 285  
 Glu Glu Arg Ala Glu Ile Arg Arg Met Leu Gln Thr Ile Arg Arg Arg  
 290 295 300  
 Gly Asp Gly Leu Ile Arg Phe Val Asn Ser Tyr Arg Glu Val Ser His  
 305 310 315 320  
 Leu Pro Gln Pro Leu Leu Lys Ile Tyr Thr Ser Gln Glu Leu Leu Thr  
 325 330 335  
 Gly Val Val Arg Leu Met Tyr Arg Glu Pro Asn Asp Leu His Leu Ile  
 340 345 350  
 Leu Pro Pro Lys Gly Gln Arg Leu Met Ala Asp Lys Asp Leu Ile Glu  
 355 360 365  
 Gln Val Leu Ile Asn Leu Ile Lys Asn Ala Arg Glu Asn Asp Ala Thr  
 370 375 380  
 Asp Ile Arg Ile Ser Ala Gly Leu Ser Ser Gly Glu Arg Pro Tyr Ile  
 385 390 395 400  
 Arg Ile Glu Asp Asn Gly Thr Gly Ile Glu Gln Glu Val Leu Asp Arg  
 405 410 415  
 Ile Phe Ile Pro Phe Phe Thr Thr Lys Pro Thr Gly Ser Gly Ile Gly  
 420 425 430  
 Leu Thr Ile Ser Arg Gln Ile Ile His Leu His Arg Gly Thr Ile Thr  
 435 440 445  
 Val Ser Ser Glu Pro Gly Lys Gly Ser Ile Phe Thr Leu Leu Phe Pro  
 450 455 460  
 Gly Val Phe  
 465

&lt;210&gt; 8648

&lt;211&gt; 282

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8648

Gln Arg Cys Arg Leu Ser Ala Cys Met Ile Val Cys Arg Tyr Leu Ile  
 1 5 10 15  
 Tyr Pro Arg Leu His His Ser Met Pro Lys Ser Arg Thr Glu Asp Leu  
 20 25 30  
 Leu Val Glu Ser Gln Thr Ser Tyr Phe Leu Phe Leu Asn His Ala  
 35 40 45  
 Asn Ile His Ile Phe Phe Tyr Phe Phe Ile Phe Val Leu Met Lys Thr  
 50 55 60  
 Ile Thr Thr Asp Trp Glu Leu Ile Pro Tyr Ser Glu Ala Trp Ser Arg  
 65 70 75 80  
 Gln Thr Glu Trp Phe Asp Ala Leu Val His Ala Lys Gln Asn Gly Glu  
 85 90 95  
 Ser Tyr Glu Asn Arg Ile Ile Phe Cys Glu His Pro His Val Tyr Thr  
 100 105 110  
 Leu Gly Arg Ser Gly Lys Glu Asn Asn Met Leu Leu Gly Glu Glu Gln  
 115 120 125  
 Leu Lys Thr Ile Gly Ala Thr Leu Tyr His Ile Asp Arg Gly Gly Asp  
 130 135 140  
 Ile Thr Tyr His Gly Pro Gly Gln Leu Val Cys Tyr Pro Ile Leu Asn  
 145 150 155 160  
 Leu Glu Glu Phe Gly Leu Gly Leu Lys Glu Tyr Val His Leu Leu Glu  
 165 170 175  
 Glu Ala Val Ile Arg Val Cys Ala Ser Tyr Gly Val Val Ala Gly Arg  
 180 185 190

Leu Glu Lys Ala Thr Gly Val Trp Leu Glu Gly Asp Thr Ser Arg Ala  
 195 200 205  
 Arg Lys Ile Cys Ala Ile Gly Val Arg Ser Ser His Tyr Val Thr Met  
 210 215 220  
 His Gly Leu Ala Leu Asn Val Asn Thr Asp Leu Arg Tyr Phe Ser Tyr  
 225 230 235 240  
 Ile His Pro Cys Gly Phe Ile Asp Lys Gly Val Thr Ser Leu Gln Gln  
 245 250 255  
 Glu Leu Gly Arg Ser Ile Asp Met Ala Glu Val Lys Glu Arg Leu Gly  
 260 265 270  
 Arg Glu Leu Leu Ala Asp Leu Leu Ser Lys  
 275 280

<210> 8649  
 <211> 221  
 <212> PRT  
 <213> B.fragilis

<400> 8649  
 Arg Phe Lys Arg Ser Asn Asn Ile Val Met Lys Ile Lys Arg Phe Glu  
 1 5 10 15  
 Phe Asn Met Phe Pro Val Asn Cys Tyr Val Leu Trp Asp Glu Thr Asn  
 20 25 30  
 Glu Ala Val Val Ile Asp Pro Gly Cys Phe Tyr Asp Glu Glu Lys Gln  
 35 40 45  
 Ala Leu Lys Asn Phe Ile Val Thr Asn Asn Leu Asn Ile Lys His Leu  
 50 55 60  
 Leu Asn Thr His Leu His Leu Asp His Ile Phe Gly Asn Pro Phe Met  
 65 70 75 80  
 Leu Arg Glu Phe Gly Leu Ser Ala Glu Ala Asn Gln Ala Asp Glu Tyr  
 85 90 95  
 Trp Ile Asp Glu Ala Pro Lys Gln Ser Arg Met Phe Gly Phe Gln Leu  
 100 105 110  
 Asn Glu Ala Pro Val Pro Leu Gly Lys Tyr Leu His Asp Gly Asp Ile  
 115 120 125  
 Ile Thr Phe Gly Asn Thr Thr Leu Glu Ala Ile His Val Pro Gly His  
 130 135 140  
 Ser Pro Gly Ser Leu Val Tyr Tyr Cys Arg Ala Asp Asn Cys Met Phe  
 145 150 155 160  
 Ser Gly Asp Val Leu Phe Gln Gly Ser Ile Gly Arg Ala Asp Leu Ala  
 165 170 175  
 Gly Gly Asn Phe Asp Glu Leu Lys Glu His Ile Cys Ser Arg Leu Phe  
 180 185 190  
 Val Leu Pro Asn Glu Thr Ile Val Tyr Pro Gly His Gly Ala Pro Thr  
 195 200 205  
 Thr Ile Gly Ile Glu Lys Ala Glu Asn Pro Phe Phe Arg  
 210 215 220

<210> 8650  
 <211> 129  
 <212> PRT  
 <213> B.fragilis

<400> 8650  
 Val Leu Phe Arg Ile Ile Ile Thr Pro Pro Thr Val Ala Ala Glu Thr  
 1 5 10 15  
 Met Val Pro Arg Asn Phe His Ala Ser Cys Leu Ala Gly Val Leu Pro  
 20 25 30  
 Ser Gln Tyr Pro Ile Phe Lys Ser Val Ile Lys Pro Pro Ala Met Glu



35	40	45
Ser Ala Val Gln Thr Thr	Pro Pro Ile Thr Asn Glu Ala Thr Met Pro	
50	55	60
Glu Gly Pro Phe Asn Pro Thr Ala Thr Ile Thr Thr Asp Ala Arg Ile		
65	70	75
Asn Val Ile Arg Val Met Pro Asp Thr Gly Leu Val Pro Thr Ile Ala		80
	85	90
Ile Ala Leu Ala Ala Thr Val Val Asn Arg Asn Glu Ile Pro Ala Thr		95
	100	105
Ser Arg Ile Ala Thr Ser Val Cys Thr Arg Leu Pro Cys Ile Thr Ser		110
115	120	125

Lys

&lt;210&gt; 8651

&lt;211&gt; 296

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8651

Lys Asn Lys Arg Lys Cys Val Tyr Leu Arg Asp Ser Lys Lys Glu Ser	
1	5
Asn Met Lys Phe Asp Phe Pro Gln Val Asp Leu Pro Cys Glu Ile Leu	10
	20
Ala Trp Asn Asp Val Thr Glu Asp Ile Leu Asn Ile Tyr Lys Gln Ser	25
	30
	35
Cys Arg Leu Lys Ala Gly Ile Phe Ala Ile Cys Thr Glu Gly Lys Met	40
	45
50	55
Thr Ala Thr Ile Asn Leu Ile Asp Tyr Glu Ile Lys Pro Asn Asp Leu	60
65	70
Ile Thr Leu Leu Pro Gly Thr Ile Ile Gln Phe Arg Glu Arg Thr Glu	75
	80
	85
Lys Val Arg Leu Cys Phe Ala Gly Phe Ser Ser Glu Cys Val Glu Arg	90
	95
	100
Ile Asn Leu Ile Lys Ser Met Val Ser Ser Phe Ser Lys Ile Thr Glu	105
	110
115	120
Cys Pro Ile Val Glu Leu Gln Glu Asp Ile Ala Ser Tyr Leu Ile Asp	125
130	135
Tyr Phe Ser Leu Leu Ala Arg Val Thr Cys Asp Glu Lys Leu Ser Leu	140
145	150
Pro Ser Glu Met Thr Glu Val Ser Leu Arg Ser Ile Leu Thr Ala Val	155
	160
	165
Gly Leu Ile Tyr Gln Arg Tyr Ser Ser Lys Asn His Asn Thr Asn Arg	170
	175
	180
Lys Glu Glu Ile Cys Arg Glu Leu Val Gly Leu Val Thr Glu His Tyr	185
	190
	195
Thr Glu Glu Arg Arg Ala Gln Phe Tyr Ala Asp Lys Leu Gly Ile Ser	200
	205
	210
Leu Gln His Leu Ser Thr Thr Val Lys Gln Val Thr Gly Arg Asn Val	215
225	230
Leu Asp Val Ile Ala Tyr Val Val Ile Ile Asp Ala Lys Ala Lys Leu	235
	240
	245
Lys Ser Ser Asn Met Thr Ile Gln Glu Ile Ala Tyr Ser Leu Asn Phe	250
	255
	260
Pro Ser Ala Ser Phe Phe Gly Lys Tyr Phe Arg Arg Tyr Val Gly Met	265
	270
	275
Ser Pro Leu Glu Phe Arg Asn Ser	280
	285
290	295

<210> 8652  
 <211> 237  
 <212> PRT  
 <213> B.fragilis

<400> 8652

Ser Asn Phe Ile Ile Lys Ile Gln Ile Tyr Tyr Asn Leu Met Asn Thr  
 1 5 10 15  
 Thr Glu Gln Thr Ser Ser Leu Pro Ser Ala Gly Gly Glu Asn Gly Val  
 20 25 30  
 Lys Leu Leu Thr Lys Tyr Phe Pro Asp Leu Thr Glu Glu Gln Arg Lys  
 35 40 45  
 Gln Phe Ala Ala Leu Tyr Glu Leu Tyr Ile Asp Trp Asn Ser Lys Ile  
 50 55 60  
 Asn Val Ile Ser Arg Lys Asp Ile Glu Asn Leu Tyr Glu His His Val  
 65 70 75 80  
 Leu His Ser Leu Gly Ile Ala Arg Val Ile Arg Phe Arg Ala Gly Ser  
 85 90 95  
 Ser Val Met Asp Leu Gly Thr Gly Gly Gly Phe Pro Gly Ile Pro Leu  
 100 105 110  
 Ala Ile Leu Phe Pro Asp Thr Lys Phe His Leu Val Asp Ser Ile Gly  
 115 120 125  
 Lys Lys Val Arg Val Ala Thr Glu Val Ala Asn Ala Ile Gly Leu Lys  
 130 135 140  
 Asn Val Thr Phe Arg His Ala Arg Ala Glu Glu Lys Gln Thr Phe  
 145 150 155 160  
 Asp Phe Val Val Ser Arg Ala Val Met Pro Leu Ala Asp Leu Ile Lys  
 165 170 175  
 Ile Ile Arg Lys Asn Ile Ser Pro Lys Gln Gln Asn Ala Leu Pro Asn  
 180 185 190  
 Gly Leu Ile Cys Leu Lys Gly Gly Glu Leu Glu His Glu Ala Met Pro  
 195 200 205  
 Phe Lys His Lys Thr Ser Met His Asn Leu Asn Glu Asp Phe Asp Glu  
 210 215 220  
 Glu Phe Phe Gln Thr Lys Lys Val Val Tyr Val Thr Ile  
 225 230 235

<210> 8653  
 <211> 134  
 <212> PRT  
 <213> B.fragilis

<400> 8653

Tyr Thr Thr Leu Ile Pro Phe Pro Val Ile Leu Ser Lys Leu Ser Asn  
 1 5 10 15  
 Trp Ala Gly Thr Ile Phe Ser Thr Ser Cys Arg Glu Glu Thr Met Ala  
 20 25 30  
 Pro Ala Ser Gly Cys Ser Asp Leu Ser Ser Ala Ala Ser Arg Thr Phe  
 35 40 45  
 Leu Lys Cys Ser Ser Cys Thr Trp Ala Gln Ser His Pro Glu Thr Val  
 50 55 60  
 Gly Cys Pro Ser Val Asn Val Pro Val Leu Ser Ser Thr Thr Thr Ser  
 65 70 75 80  
 Thr Leu Arg Ile Cys Ser Arg Ala Thr Ala Ser Phe Ile Arg Ile Trp  
 85 90 95  
 Leu Leu Ala Ala Leu Pro Met Pro Thr Ile Arg Ala Val Gly Val Ala  
 100 105 110  
 Ser Pro Lys Ala His Gly Gln Ala Met Thr Ser Thr Asp Thr Ala Glu  
 115 120 125

Ser Lys Ala Cys Glu Lys  
130

<210> 8654  
<211> 338  
<212> PRT  
<213> B.fragilis

<400> 8654

Leu Gln Pro Val Ser Ala Ala Leu Gln Leu Ser Phe Ser Arg Thr Glu  
1 5 10 15  
Val Glu Ser Leu Lys Glu Gln Lys Glu Ala Leu Thr Asp His Ser Pro  
20 25 30  
Glu Pro Ala Arg Ile Ile Gly Glu Ser Ala Ala Met Gln Ala Ile Phe  
35 40 45  
Gln Thr Ile Arg Lys Phe Ala Asp Thr Asp Ala Asn Leu Leu Leu Leu  
50 55 60  
Gly Glu Asn Gly Thr Gly Lys Asp Leu Ile Ala Arg Tyr Val Tyr Glu  
65 70 75 80  
Gln Ser Pro Arg Lys Gly Lys Ile Tyr Val Pro Ile Asp Leu Gly Ser  
85 90 95  
Ile Pro Glu Thr Leu Phe Glu Ser Glu Leu Phe Gly Phe Glu Lys Gly  
100 105 110  
Ala Phe Thr Asp Ala Arg Lys Lys Lys Pro Gly Arg Leu Glu Val Ala  
115 120 125  
Ser Gly Gly Thr Leu Phe Leu Asn Glu Ile Gly Asn Leu Ser Leu Pro  
130 135 140  
Leu Gln Ala Lys Leu Leu Ser Val Ile Glu Gln Arg Lys Ser Ser Arg  
145 150 155 160  
Leu Gly Ser Thr Thr Ser Tyr Pro Val Asp Val Arg Leu Ile Cys Ala  
165 170 175  
Thr Asn Thr Asp Leu Tyr Thr Ala Ile Asp Asn Gly Leu Phe Arg Gln  
180 185 190  
Asp Leu Leu Tyr Arg Ile Asn Thr Ile Glu Ile Arg Ile Pro Pro Leu  
195 200 205  
His Glu Arg Gly Asn Asp Leu Phe Leu Leu Ala Asp His Phe Leu Gln  
210 215 220  
Arg Tyr Arg Lys Lys Tyr Lys Lys Glu Val Arg Gly Ile Ser Lys Glu  
225 230 235 240  
Ala Arg Arg Leu Met Gln Leu Tyr Arg Trp Pro Gly Asn Val Arg Glu  
245 250 255  
Leu Glu His Thr Ile Glu Arg Ala Val Ile Leu Ser Gly Asn Pro Met  
260 265 270  
Leu Met Pro Asn Asp Phe Met Leu Arg Thr Ser Pro Gln Gly Gln Val  
275 280 285  
Ser Glu Lys Glu Lys Tyr Asn Leu Glu Arg Gln Glu Arg Glu Thr Ile  
290 295 300  
Ser Glu Val Leu Arg Leu Cys Ala Gly Asn Ile Thr Leu Ala Ser Glu  
305 310 315 320  
Met Leu Gly Ile Thr Arg Thr Ser Leu Tyr Arg Arg Ile Glu Lys His  
325 330 335  
Gly Leu

<210> 8655  
<211> 158  
<212> PRT  
<213> B.fragilis

&lt;400&gt; 8655

Phe Ile Leu Val Asn Arg Gln His Lys Lys Arg Lys Lys Asn Val Ala  
 1 5 10 15  
 Gly Trp Leu Asn Leu Leu Ile Phe Ala Thr Val Met Lys Arg Phe Arg  
 20 25 30  
 Tyr Ile Leu Ala Val Ile Leu Ser Leu Leu Ile Val Tyr Val Gly Ala  
 35 40 45  
 Gly Val Ser Val Ala Gln Tyr Cys Cys Ser Gly Cys Glu Thr Ala Asn  
 50 55 60  
 Cys Cys Cys Ala Asp Lys Cys Gly Phe Cys Gly Lys Phe Asp Phe Glu  
 65 70 75 80  
 Phe His Lys Ser Cys Arg Gly Glu Gly Cys Thr Ala Thr Ile Tyr Lys  
 85 90 95  
 Leu Asp Leu Val Lys Gln Ala Phe Glu Ser Ser Val Pro Ala Pro Val  
 100 105 110  
 Ser Leu Leu Leu Cys Asp Gln Val Ser Asp Leu Leu Cys Ala Leu Phe  
 115 120 125  
 Arg Asp Glu Val Leu Asp Pro Pro Tyr Val Ile Pro Pro Pro Lys Thr  
 130 135 140  
 Ser Ser Arg His Tyr Leu Ala Leu Tyr Ser Thr Leu Leu Ile  
 145 150 155

&lt;210&gt; 8656

&lt;211&gt; 433

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8656

Glu Asn Ile Ser Val Ser Pro Gly Lys Lys Lys Gln Met Ile Glu Lys  
 1 5 10 15  
 Met Lys Glu Gln Asp Cys Asp Lys Lys Lys Ser Ile Ser Gln Gly Lys  
 20 25 30  
 Lys His Asn Ile Phe Tyr Lys Met Ile Met Ser Arg Arg Ala Phe Gly  
 35 40 45  
 Ile Thr Tyr Phe Val Tyr Gly Ala Thr Val Leu Ser Val Leu Ala Glu  
 50 55 60  
 Arg Ala Glu Ile Leu Ser Ser Thr Pro Ser Val Gly Ser Arg Ile Phe  
 65 70 75 80  
 Leu Leu Leu Ser Ile Cys Phe Pro Phe Ala Tyr Gly Thr Tyr Leu Leu  
 85 90 95  
 Cys Thr Lys Asp Lys Asn Ser Ile Lys Met Asn Glu Ile Ile Thr Ser  
 100 105 110  
 Asp Tyr Phe Lys Arg Val Ile Ser His Lys Trp Asn Ile Ile Ile Cys  
 115 120 125  
 Leu Met Val Ile Val Val Cys Leu Ser Phe Val Val Ile Phe Ser Asp  
 130 135 140  
 Arg Asn Trp Glu Ala Pro Ile Asn Phe Asn Leu Pro Ser Ile Ile Val  
 145 150 155 160  
 Gly Ser Val Thr Gly Tyr Leu Leu Gly Val Leu Ile Arg Arg Val Leu  
 165 170 175  
 Arg Arg Asn Asn Thr Gly Lys Lys Ser Phe Lys Leu Ile Phe Glu Cys  
 180 185 190  
 Val Gly Ser Leu Cys Leu Lys Val Ser Asp Gln Leu Glu Glu Ser Val  
 195 200 205  
 Phe Thr Ile Asp Trp Asp Ser Ser Ile Ile Pro Pro Ser Ile Gly Asp  
 210 215 220  
 Asp Phe Glu Ile Glu Glu Phe Ile Pro Gly Leu Asn Trp Asn Glu Lys  
 225 230 235 240  
 Gln Arg Leu Tyr Ser Ile Tyr Gly His Ala Thr Val Ile Glu Arg Ser

4770 8655 8656 433 PRT B.fragilis  
 1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240

245 250 255  
 Phe Tyr Lys Lys Glu His Val Thr Tyr Ile Ser Ile Val Leu Met Asp  
 260 265 270  
 Ser Asp Glu Ile Gln Thr Met Asn Asp Gln Glu Arg Leu Leu Arg Ile  
 275 280 285  
 Lys Ala Arg Arg Lys Pro Ala Thr Ala Thr Gly Lys Arg Thr Gly Gly  
 290 295 300  
 Arg Ala Gly Ala Val Met Pro Asp Lys Lys Glu Asp Leu Pro Pro Asp  
 305 310 315 320  
 Asp Leu Lys Ala Asp Leu Tyr Ala Glu Leu Asn Lys Glu Ala Arg Lys  
 325 330 335  
 Ala Asp Tyr Ile Pro Tyr Ser Pro Asp Lys Leu Ile Ile Gly Gln Phe  
 340 345 350  
 Gly Lys Val Met His Gly Lys Glu Asn Leu Ile Glu Tyr Val Leu Leu  
 355 360 365  
 Ser Asp Arg Phe Leu Asn Arg Gln Glu Ser Phe Glu Thr Tyr Phe Tyr  
 370 375 380  
 Leu Leu Ser Ile Pro Thr Ile Ser Cys Gly Ser Phe His Lys Glu Thr  
 385 390 395 400  
 Gly Glu Arg Ser Glu Gly Cys Lys Val Ile Glu Met Glu Val Ile Asp  
 405 410 415  
 Glu Ala Arg Ala Arg Glu Arg Tyr Arg Arg Phe Leu Ala Val Trp Lys  
 420 425 430  
 Glu

<210> 8657  
 <211> 266  
 <212> PRT  
 <213> B.fragilis

<400> 8657

Arg Cys Arg Phe His Thr Asp Ser Ile Asn Asn Pro Asn Phe Phe Tyr  
 1 5 10 15  
 Phe Ala Ala Lys Glu Val His Phe Lys Ile Leu Thr His Ser Phe Ala  
 20 25 30  
 Thr His Gln Met Met Cys Ile Phe Ala Asn His Lys His Ile Thr Asn  
 35 40 45  
 Met Lys Asn Glu Val Asp Gly Arg Arg Glu Ile Ala Ser Arg Asn Thr  
 50 55 60  
 Ala Trp Ala Asn Ile Ile Ala Arg Lys Leu Thr His Trp Gly Val Thr  
 65 70 75 80  
 Pro Asn Gln Ile Ser Met Met Ser Val Phe Phe Ala Met Val Gly Cys  
 85 90 95  
 Leu Leu Leu Ile Gly Thr Val Ile Tyr Pro Gly Phe Asn Lys Tyr Val  
 100 105 110  
 Ala Tyr Ile Leu Phe Ile Val Cys Met Gln Ser Arg Leu Leu Cys Asn  
 115 120 125  
 Leu Phe Asp Gly Met Val Ala Ile Glu Gly Gly Lys Lys Ser Ala Asn  
 130 135 140  
 Gly Asp Leu Tyr Asn Asp Met Pro Asp Arg Phe Ala Asp Ala Leu Phe  
 145 150 155 160  
 Ile Ile Pro Val Gly Tyr Val Ala Gly Gly Phe Gly Ile Glu Leu Gly  
 165 170 175  
 Trp Leu Ala Ala Leu Leu Ala Val Met Thr Ala Tyr Phe Arg Trp Ile  
 180 185 190  
 Gly Ala Tyr Lys Thr His Gln His Phe Phe Asn Gly Pro Met Ala Lys  
 195 200 205  
 Gln His Arg Met Ala Leu Leu Thr Leu Thr Phe Val Val Ala Thr Cys

210 215 220  
 Thr Ile Tyr Ser Gly Tyr Asp Arg Met Val Cys Phe Ile Ala Leu Ile  
 225 230 235 240  
 Ile Ile Asn Ile Gly Leu Ile Ala Thr Leu Ile His Arg Leu Tyr Leu  
 245 250 255  
 Ile Ser His Thr Thr Asn Thr Glu Ile Lys  
 260 265

<210> 8658  
 <211> 221  
 <212> PRT  
 <213> B.fragilis

<400> 8658  
 Ser Phe Leu Ser Thr Phe Ala Gly Met Lys Pro Leu Thr Asp Thr Asp  
 1 5 10 15  
 Tyr Ile His Ala Leu Ile Ala Glu Gly Glu His Gln Gln Gln Asp Phe  
 20 25 30  
 Lys Phe Glu Ile Ser Asp Ala Arg Lys Ile Ala Lys Thr Leu Ser Ala  
 35 40 45  
 Phe Ala Asn Thr Asp Gly Gly Arg Leu Leu Ile Gly Val Lys Asp Asn  
 50 55 60  
 Gly Lys Ile Ala Gly Val Arg Ser Asp Glu Glu Lys Tyr Met Ile Glu  
 65 70 75 80  
 Ala Ala Ala Gln Leu Tyr Cys Arg Pro Glu Val Asp Tyr Ser Met Gln  
 85 90 95  
 Thr Phe His Val Glu Gly Arg Ser Val Leu Val Val Gln Ile Asp Glu  
 100 105 110  
 Ser Glu His Lys Pro Val Phe Ala Lys Asp Glu Asn Gly Lys Ser Leu  
 115 120 125  
 Ala Tyr Ile Arg Ile Lys Asp Glu Asn Ile Leu Ala Thr Pro Val His  
 130 135 140  
 Leu Arg Val Trp Gln Gln Ser Gly Ser Pro Ala Gly Glu Leu Ile Arg  
 145 150 155 160  
 Tyr Thr Glu Arg Glu Gln Leu Leu Leu Asp Leu Leu Glu Glu Asn Thr  
 165 170 175  
 Ser Leu Ser Leu Asn Arg Tyr Cys Arg Gln Ala Gly Ile Ser Arg Arg  
 180 185 190  
 Ala Ala Glu His Leu Leu Ala Lys Phe Ile Arg Phe Asp Ile Val Glu  
 195 200 205  
 Pro Ile Phe Glu Asn His Lys Phe Tyr Phe Arg Leu Lys  
 210 215 220

<210> 8659  
 <211> 304  
 <212> PRT  
 <213> B.fragilis

<400> 8659  
 Glu Arg Ile Ser Ile Met Thr Gly Asp Tyr Lys Phe Arg Phe Met Pro  
 1 5 10 15  
 Gly Ile Leu Ser Leu Ile Phe Thr Ala Val Leu Leu Ser Gly Cys Ile  
 20 25 30  
 Ala Glu Asn Thr Asp Asp Cys Phe Lys Gly Val Ser Leu Gln Val Lys  
 35 40 45  
 Leu Pro Ala Asp Val Ser Gly Glu Thr Met Lys Asp Ile Asn Leu Tyr  
 50 55 60  
 Val Phe Asp Asp Lys Asp Leu Leu Leu Asp Ile Leu Pro Ile Ser Arg  
 65 70 75 80

Ser Glu Ser Val Val Leu Asp Tyr Pro Gly Ile Pro Val Leu His Cys  
 85 90 95  
 Ile Thr Trp Cys Asn Thr Gly Asp Gly Ala Val Ser Ala Ser Ser Leu  
 100 105 110  
 Lys Lys Gly Asp Pro Leu Ser Ala Gly Phe Ile Ser Leu Lys Pro Ser  
 115 120 125  
 Ala Ala Thr Arg Ala Gln Met Ser Leu Phe Asn Pro Pro Ala Asp Leu  
 130 135 140  
 Phe Tyr Gly Glu Leu Ile Leu Glu Asn Thr Ser Thr Ser Asn His Met  
 145 150 155 160  
 Glu Glu Gln Glu Leu Ser Val Ser Arg Met Val Ala Ser Met Asn Ile  
 165 170 175  
 Thr Ile Arg Gly Leu Glu Leu Leu Gly Glu Ser Asn Arg Gly Val Tyr  
 180 185 190  
 Ser Phe Val Val His Glu Thr Ala Ser Arg Leu Asp Phe Glu Gly Arg  
 195 200 205  
 Tyr Gly Gly Asp Pro Ala Ser Tyr Ala Phe Thr Pro Ser Phe Glu Val  
 210 215 220  
 Gly Lys Asp Cys Thr Met Pro Thr Phe Asn Leu Phe Pro Val Met Gly  
 225 230 235 240  
 Ser Gly Gly Ile Ile Ile Asp Ile Tyr His Asp Gly Lys Leu Leu Arg  
 245 250 255  
 Ser Val Ser Thr Asp Ser Gly Asn Arg Pro Leu Val Pro Val Val Gly  
 260 265 270  
 Lys Thr Leu Asn Val Leu Leu Asn Phe Lys Leu Asp Val Asp Val Gln  
 275 280 285  
 Val Glu Ile Thr Gly Trp Gly Glu Lys Tyr Ile Trp Lys Glu Tyr Asn  
 290 295 300

&lt;210&gt; 8660

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8660

Leu Ser Pro Ser Pro Ala Gln Pro Ala Cys Tyr Glu Asn Val Tyr Cys  
 1 5 10 15  
 Asn Val Asp Asp Pro Val Pro Pro Val Cys Gln Ala Val Thr Leu Ile  
 20 25 30  
 Glu Asp Val Ile Ser Phe Gly Val Lys Val Arg Val Ile Lys Cys Asp  
 35 40 45  
 Phe Pro Thr Ser Val Val Thr Glu Met Val Asp Ser Gly  
 50 55 60

&lt;210&gt; 8661

&lt;211&gt; 302

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8661

Ala Met Thr Ser Gln Glu Ala Asn Ser Ile Pro Leu Glu Asp Ile Leu  
 1 5 10 15  
 Ser Arg Tyr Gly Tyr Glu Pro Ser Arg Arg Tyr Gly Gly Tyr Asp Met  
 20 25 30  
 Tyr Arg Ser Pro Phe Arg Cys Asp Ser Ser Pro Ser Phe Lys Val Phe  
 35 40 45  
 Arg Asn Glu Asn Arg Trp Tyr Asp Phe Gly Asp Ser Ser His Gly Arg  
 50 55 60  
 Val Val Asp Leu Val Met Arg Ile His Asn Cys Ser Phe Pro Gln Ala

65		70		75		80									
Met	Lys	Glu	Ile	Glu	Gly	Leu	Gly	Phe	Ser	Ser	Gly	Met	Ile	Pro	Gln
		85							90					95	
Pro	Arg	Pro	Val	Pro	Val	Thr	Val	Gln	Lys	Ala	Ser	Gly	Met	Thr	Leu
		100						105					110		
Leu	Lys	Ile	Ile	Pro	Val	Glu	Asn	Gly	His	Leu	Leu	Asp	Tyr	Ala	Ala
		115				120						125			
Ser	Arg	Gly	Ile	Asp	Ala	Asp	Ile	Val	Arg	Glu	His	Cys	Val	Glu	Val
		130				135					140				
His	Tyr	Cys	Phe	Glu	Lys	Asn	Pro	Arg	Glu	Lys	Tyr	Ala	Leu	Gly	Phe
145					150					155					160
Ala	Asn	Asp	His	Gly	Gly	Phe	Glu	Leu	Arg	Asn	Ser	Met	Phe	Lys	Gly
			165						170					175	
Cys	Ala	Thr	Ala	Lys	Asp	Ile	Thr	Gly	Leu	Ala	Ala	Gly	Asn	Arg	Ser
		180						185					190		
Cys	Ala	Val	Phe	Glu	Gly	Phe	Phe	Asp	Leu	Leu	Ser	Phe	Lys	Gln	Tyr
		195				200						205			
Ala	Lys	Glu	His	Pro	Glu	Met	Pro	Ala	Leu	Gly	Lys	Leu	Asp	Leu	Cys
		210				215					220				
Val	Leu	Asn	Ser	Thr	Ser	Ile	Val	Glu	Arg	Ser	Lys	Asp	Phe	Leu	Ser
225					230					235					240
Arg	Tyr	Glu	Lys	Val	His	Ala	Phe	Leu	Asp	Asn	Asp	Ala	Pro	Gly	Arg
			245						250					255	
Glu	Ala	Leu	Arg	Lys	Met	Arg	His	Phe	Leu	Pro	Lys	Asp	Thr	Val	Leu
		260						265					270		
Val	Asn	Glu	Ala	Glu	Arg	Leu	Tyr	Pro	Ser	Cys	Asn	Asp	Phe	Asn	Glu
		275				280					285				
Phe	Leu	Gln	Lys	Ile	Lys	Cys	Pro	Ala	Ser	Gly	Arg	Glu	Met		
		290				295					300				

&lt;210&gt; 8662

&lt;211&gt; 326

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8662

Ser	Lys	Thr	Phe	Lys	Val	Ile	Phe	Met	Glu	Gln	Leu	Ser	Phe	Ile	Glu
1				5					10					15	
Ser	Phe	Arg	Thr	Ser	Pro	Phe	Ile	Leu	Thr	Glu	Gly	Ala	Ile	Val	Glu
			20					25					30		
Arg	Leu	Arg	His	Glu	Phe	His	Ile	Ser	Pro	Asp	Lys	His	Ile	Ala	His
		35				40					45				
Ala	Ala	Leu	Ile	Tyr	Asp	Asp	Ser	His	Arg	Glu	Ile	Leu	Ala	Ser	Ile
	50				55					60					
Tyr	Arg	Gln	Tyr	Leu	Gln	Ile	Ala	Thr	Glu	Phe	Arg	Leu	Pro	Leu	Met
65				70					75					80	
Leu	Met	Thr	Pro	Thr	Arg	Arg	Ala	Asn	Ile	Glu	Gln	Ile	Ala	Ala	Ser
				85				90					95		
Asp	Tyr	Arg	His	Lys	Asn	Val	Leu	Ala	Asp	Thr	Met	Ala	Phe	Leu	Ser
		100						105					110		
Arg	Phe	Arg	Asp	Glu	Ala	Ser	Thr	Pro	Val	Tyr	Ile	Gly	Gly	Leu	Ala
		115				120						125			
Gly	Cys	Arg	Gly	Asn	Ala	Tyr	Asp	Gly	Arg	Tyr	Tyr	Leu	Ser	Val	Glu
	130					135				140					
Glu	Ala	Met	Glu	Phe	His	Phe	Pro	Thr	Val	Arg	Thr	Leu	Val	Gln	Ser
145				150						155					160
Gly	Ala	Asp	Tyr	Leu	Phe	Ala	Gly	Ile	Met	Pro	Gln	Leu	Thr	Glu	Ala
			165					170					175		
Ile	Gly	Met	Ala	Asn	Ala	Met	Ala	Ala	Thr	Gly	Leu	Pro	Tyr	Ile	Ile



180 185 190  
 Ser Phe Met Ile Cys Arg Asp Gly Arg Leu Ile Asp Gly Thr Phe Ile  
 195 200 205  
 His Asp Ala Ile Asp Ala Ile Glu Lys Glu Thr Ser Thr Arg Pro Leu  
 210 215 220  
 Cys Tyr Met Ala Asn Cys Val His Pro Asp Val Leu His Gln Ala Leu  
 225 230 235 240  
 Leu His Pro Arg Asn Asp Thr Pro Leu Val Arg Gln Arg Phe Gln Gly  
 245 250 255  
 Ile Gln Ala Asn Ala Ala Asn Leu Ser Pro Glu Glu Leu Asp Gly Cys  
 260 265 270  
 Asp His Leu Ile Ser Ser Ser Pro Glu Glu Leu Ala Asp Arg Leu Met  
 275 280 285  
 Thr Leu Leu Trp Asp Phe Pro Leu Lys Ile Cys Gly Gly Cys Cys Gly  
 290 295 300  
 Thr Asn Gln Gln His Met His Arg Phe Ala Glu Met Leu Ala Tyr Arg  
 305 310 315 320  
 Arg Asp Asn Lys Ala Trp  
 325

<210> 8663

<211> 75

<212> PRT

<213> B.fragilis

<400> 8663

Thr Val Thr Pro Glu Ser Ser Phe Leu Tyr Ser Gly Ile Ile Ala Tyr  
 1 5 10 15  
 Ser Ile Cys Asp Ile Ala Ile Ser Arg Glu Leu Lys Ala Ala Tyr Leu  
 20 25 30  
 Cys Asn Ile Arg Leu Arg Gln Leu Lys Glu Asp Pro Lys Arg Tyr Glu  
 35 40 45  
 Lys Glu Phe Ile Asn Phe Ser Arg Thr Ala Asp Ile Gly Asn Asp Ile  
 50 55 60  
 Gly Thr Glu Arg Arg Asn His Tyr Glu Glu Val  
 65 70 75

<210> 8664

<211> 513

<212> PRT

<213> B.fragilis

<400> 8664

Ile Thr Met Leu Val Thr Ile Val Ala Ser Ile Ala Cys Phe Ile Val  
 1 5 10 15  
 Gly Gly Ile Leu Ser Tyr Val Leu Phe Lys Tyr Gly Leu Lys Ala Lys  
 20 25 30  
 Tyr Asp Asn Val Leu Lys Glu Ala Glu Thr Glu Ala Glu Val Ile Lys  
 35 40 45  
 Lys Asn Lys Leu Leu Glu Val Lys Glu Lys Phe Leu Asn Lys Lys Ala  
 50 55 60  
 Asp Leu Glu Lys Glu Val Ala Leu Arg Asn Gln Lys Ile Gln Gln Ala  
 65 70 75 80  
 Glu Asn Lys Leu Lys Gln Arg Glu Met Val Leu Ser Gln Arg Gln Glu  
 85 90 95  
 Glu Ile Gln Arg Lys Arg Ala Glu Ala Asp Ala Val Arg Glu Asn Leu  
 100 105 110  
 Glu Ala Gln Leu Gly Ile Val Asp Lys Lys Lys Glu Glu Leu Asp Lys  
 115 120 125

Leu Gln His Gln Glu Ile Glu Lys Leu Glu Ala Leu Ser Gly Leu Ser  
 130 135 140  
 Ala Asp Glu Ala Lys Glu Arg Leu Val Glu Ser Leu Lys Glu Glu Ala  
 145 150 155 160  
 Lys Thr Gln Ala Gln Ser Tyr Ile Asn Asp Ile Met Asp Asp Ala Lys  
 165 170 175  
 Leu Thr Ala Ser Lys Glu Ala Lys Arg Ile Val Ile Gln Ser Ile Gln  
 180 185 190  
 Arg Val Ala Thr Glu Thr Ala Ile Glu Asn Ser Val Thr Val Phe His  
 195 200 205  
 Ile Glu Ser Asp Glu Ile Lys Gly Arg Ile Ile Gly Arg Glu Gly Arg  
 210 215 220  
 Asn Ile Arg Ala Leu Glu Ala Ala Thr Gly Val Glu Ile Val Val Asp  
 225 230 235 240  
 Asp Thr Pro Glu Ala Ile Val Leu Ser Ala Phe Asp Pro Val Arg Arg  
 245 250 255  
 Glu Ile Ala Arg Leu Ala Leu His Gln Leu Val Thr Asp Gly Arg Ile  
 260 265 270  
 His Pro Ala Arg Ile Glu Glu Val Val Ala Lys Val Arg Lys Gln Val  
 275 280 285  
 Glu Glu Glu Ile Ile Glu Thr Gly Lys Arg Thr Thr Ile Asp Leu Gly  
 290 295 300  
 Ile His Gly Leu His Pro Glu Leu Ile Arg Ile Ile Gly Lys Met Lys  
 305 310 315 320  
 Tyr Arg Ser Ser Tyr Gly Gln Asn Leu Leu Gln His Ala Arg Glu Thr  
 325 330 335  
 Ala Asn Leu Cys Ala Val Met Ala Ser Glu Leu Gly Leu Asn Pro Lys  
 340 345 350  
 Lys Ala Lys Arg Ala Gly Leu Leu His Asp Ile Gly Lys Val Pro Asp  
 355 360 365  
 Glu Glu Pro Glu Leu Pro His Ala Leu Leu Gly Met Lys Leu Ala Glu  
 370 375 380  
 Lys Phe Lys Glu Lys Pro Asp Ile Cys Asn Ala Ile Gly Ala His His  
 385 390 395 400  
 Asp Glu Ile Glu Met Thr Ser Leu Leu Ala Pro Ile Val Gln Val Cys  
 405 410 415  
 Asp Ala Ile Ser Gly Ala Arg Pro Gly Ala Arg Arg Glu Ile Val Glu  
 420 425 430  
 Ala Tyr Ile Lys Arg Leu Asn Asp Leu Glu Gln Leu Ala Met Ser Tyr  
 435 440 445  
 Pro Gly Val Thr Lys Thr Tyr Ala Ile Gln Ala Gly Arg Glu Leu Arg  
 450 455 460  
 Val Ile Val Gly Ala Asp Lys Ile Asp Asp Lys Gln Thr Glu Asn Leu  
 465 470 475 480  
 Ser Gly Glu Ile Ala Lys Lys Ile Gln Asp Glu Met Thr Tyr Pro Gly  
 485 490 495  
 Gln Val Lys Ile Thr Val Ile Arg Glu Thr Arg Ala Val Ser Phe Ala  
 500 505 510  
 Lys

&lt;210&gt; 8665

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8665

Gly Tyr Phe Pro Pro Ser Ile Asn Phe Ile Phe His Ile Cys Asp Met  
 1 5 10 15

Phe Met Ile Arg Lys Tyr Thr His His Leu Met Ser Cys Lys Gly Met  
                   20                  25                  30  
 Ser Glu Asn Phe Glu Met Asn Leu Phe Cys Ser Lys Ile Lys Lys Val  
                   35                  40                  45  
 Trp Val Val Tyr Gly Ile Cys Val Glu Ser Ala Ser Leu  
                   50                  55                  60

<210> 8666

<211> 251

<212> PRT

<213> B.fragilis

<400> 8666

Phe Tyr Leu Pro Asp Ala Gly Cys Phe His Phe Ile Ser Val Phe Leu  
 1                  5                  10                  15  
 Gln Glu Ser Lys Glu Arg Asp Met Gln Gln Ile Lys Val Ile Ala Phe  
                   20                  25                  30  
 Asp Ala Asp Asp Thr Leu Trp Asp Asn Gln Val Phe Tyr Asp Lys Val  
                   35                  40                  45  
 Glu Ser Glu Phe Cys His Leu Leu Ala Gly Tyr Gly Thr Ala Glu Glu  
                   50                  55                  60  
 Ile Ser Ser Arg Leu Phe Ala Ile Glu Met Glu Asn Met Asp Ile Tyr  
 65                  70                  75                  80  
 Lys Tyr Gly Ala Lys Pro Phe Thr Leu Ser Met Val Glu Ala Ala Val  
                   85                  90                  95  
 Lys Ile Ser Arg Asn Arg Val Pro Ala Glu Val Ile Gly Arg Ile Val  
                   100                  105                  110  
 Glu Met Gly Lys Glu Leu Leu Glu Met Pro Ile Arg Leu Leu Gly Gly  
                   115                  120                  125  
 Val Thr Glu Ala Leu Glu Thr Leu Lys Asp Asp Tyr Lys Leu Val Val  
                   130                  135                  140  
 Ala Thr Lys Gly Asp Leu Leu Asp Gln Glu Arg Lys Leu Gln Arg Ser  
 145                  150                  155                  160  
 Gly Ile Ser His Tyr Phe Asp His Thr Glu Ile Met Thr Asp Lys Ala  
                   165                  170                  175  
 Pro Gln Asp Tyr Gln Arg Leu Ile Ser Ser Leu Asp Val Ala Pro Gln  
                   180                  185                  190  
 Ser Phe Leu Met Val Gly Asn Ser Leu Lys Ser Asp Val Leu Pro Val  
                   195                  200                  205  
 Leu Ser Leu Gly Gly His Ala Ile His Val Pro Ala Glu Ala Met Trp  
                   210                  215                  220  
 Lys His Glu Val Ile Ser Gly Thr Glu Arg Glu Tyr Leu Met Ile His  
 225                  230                  235                  240  
 Ser Leu Ala Glu Leu Pro Ala Val Leu Arg Gly  
                   245                  250

<210> 8667

<211> 1445

<212> PRT

<213> B.fragilis

<400> 8667

Leu Ile Ser Phe Ile Met Ser Gln Glu Asn Pro Ser Ser Gln Leu Asp  
 1                  5                  10                  15  
 Val Glu Phe Ile Tyr Leu Pro Val Ile Asn Tyr Ser Met Gln Gln Asn  
                   20                  25                  30  
 Arg Ile Pro Val Val Arg Leu Leu Ser Ile Lys Asn Asn Thr Glu His  
                   35                  40                  45  
 Pro Leu Ala Asp Leu Lys Val Phe Leu Thr Leu Glu Pro Glu Phe Ala

Species	Sex	Age	Weight (g)	Length (mm)	Wing (mm)	Tail (mm)	Bill (mm)	Foot (mm)	Claw (mm)
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Immature	90	160	90	100	13	23	8
Red-tailed Tropicbird	Female	Immature	80	150	85	95	12	22	7
Red-tailed Tropicbird	Male	Adult	120	190	105	115	16	26	11
Red-tailed Tropicbird	Female	Adult	115	185	102	112	15.5	25.5	10.5
Red-tailed Tropicbird	Male	Adult	105	175	98	108	14.5	24.5	9.5
Red-tailed Tropicbird	Female	Adult	95	165	93	103	13.5	23.5	8.5
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird	Female	Adult	100	170	95	105	14	24	9
Red-tailed Tropicbird	Male	Adult	110	180	100	110	15	25	10
Red-tailed Tropicbird									

Arg	Tyr	Ala	Pro	Ile	Leu	Leu	Leu	Pro	Val	Glu	Met	Ile	Arg	Lys	Ser
530								535			540				
Val	Ser	Lys	Gly	Tyr	Ile	Ile	Arg	Ala	Arg	Glu	Glu	Glu	Ser	Met	Leu
545							550			555					560
Asn	Ile	Thr	Leu	Leu	Glu	Met	Leu	Arg	Gln	Asn	Phe	Gly	Ile	Thr	Ile
							565			570					575
Ser	Gly	Leu	Asp	Ser	Leu	Pro	Lys	Asp	Glu	Asn	Gly	Thr	Asp	Val	Lys
							580			585				590	
Arg	Ile	Phe	Ser	Ile	Phe	Arg	Lys	Ala	Val	Met	Asn	Glu	Lys	Arg	Trp
								600						605	
Asp	Val	Glu	Glu	Gln	Ala	Ile	Leu	Gly	Thr	Phe	Ser	Phe	Ser	Lys	Phe
								610						615	
Ile	Met	Trp	Asn	Asp	Ile	His	Ser	Asn	Ala	Glu	Glu	Leu	Ser	Lys	Asn
625								630						635	640
Lys	Ile	Val	Gly	Ser	Leu	Met	Ser	Gly	Lys	Met	Glu	Trp	Glu	Val	Ala
								645						650	655
Glu	Val	Asp	Ala	Asn	Ala	Ile	Glu	Leu	Asp	His	Ala	Leu	Thr	Pro	Ala
								660						665	670
Asp	Ile	Ala	Leu	Pro	Val	Ser	Ala	Asp	Ser	Ser	Gln	Leu	Glu	Ala	Val
								675						680	685
Tyr	Glu	Ala	Val	Asn	Glu	Lys	Ser	Phe	Ile	Leu	His	Gly	Pro	Pro	Gly
								690						695	700
Thr	Gly	Lys	Ser	Gln	Thr	Ile	Thr	Asn	Ile	Ile	Ala	Asn	Ala	Leu	Tyr
705								710						715	720
Gln	Gly	Lys	Arg	Val	Leu	Phe	Val	Ala	Glu	Lys	Met	Ala	Ala	Leu	Ser
								725						730	735
Val	Val	Gln	Lys	Arg	Leu	Met	Asn	Ile	Gly	Leu	Ala	Pro	Phe	Cys	Leu
								740						745	750
Glu	Leu	His	Ser	Asn	Lys	Ala	Arg	Lys	Thr	Asp	Val	Leu	Ser	Gln	Leu
								755						760	765
Lys	Glu	Ser	Thr	Glu	Ile	Phe	Arg	Tyr	Lys	Glu	Pro	Glu	Glu	Phe	Lys
								770						775	780
Glu	Glu	Ser	Glu	Arg	Leu	Phe	Lys	Met	Arg	Gln	Gln	Ile	Asn	Gly	Tyr
785								790						795	800
Val	Glu	Ala	Leu	His	Arg	Ile	Tyr	Pro	Cys	Gly	Ile	Ser	Val	Tyr	Glu
								805						810	815
Ala	Ile	Thr	Arg	Tyr	Ser	Ser	Ile	Asp	Glu	Thr	Glu	Glu	Ile	Met	Ile
								820						825	830
Pro	Ala	Ser	Leu	Leu	Ala	Ser	Leu	Thr	Lys	Glu	Gln	Phe	Asn	Glu	Trp
								835						840	845
Asn	His	Ala	Val	Glu	Glu	Leu	Ile	Gly	Val	Gly	Lys	Val	Ser	Gly	His
								850						855	860
Ser	His	Gln	His	Pro	Leu	Thr	Gly	Ile	Asn	Ile	Met	Glu	Tyr	Ser	Ser
865								870						875	880
Gln	Leu	Lys	Glu	Glu	Ala	Asp	Lys	Leu	Leu	Lys	Asp	Tyr	Met	Ile	Leu
								885						890	895
Leu	Gln	Lys	Met	Glu	Glu	Lys	Met	Asn	Arg	Cys	Phe	Ser	Asn	Tyr	Gly
								900						905	910
Ile	Gly	Asn	Lys	Cys	Thr	Glu	Lys	Leu	Leu	Asp	Asn	Phe	Val	Arg	Phe
								915						920	925
Ile	Arg	Ile	Leu	Met	Gln	Leu	Pro	Gly	Met	Thr	Gly	Asn	Leu	Met	Leu
								930						935	940
Leu	Thr	Asp	Leu	Asp	Glu	Asn	Val	Asp	Lys	Ile	Gly	Arg	Ile	Ile	Glu
945								950						955	960
His	Gly	Arg	Lys	Arg	Asp	Glu	Phe	Cys	Asn	Leu	Leu	Lys	Gln	Ser	Phe
								965						970	975
Glu	Asp	Thr	Phe	Leu	Thr	Leu	Pro	Val	Gln	Gln	Lys	Ile	Ser	Glu	Trp
								980						985	990
Lys	Asp	Ile	Thr	Gln	Ser	Trp	Phe	Leu	Pro	Arg	Leu	Leu	Lys	Gln	Arg

995 1000 1005  
 Lys Phe Cys Lys Glu Leu Ser Leu Phe Ser Leu Gln Gly Arg Val Asn  
 1010 1015 1020  
 Lys Glu Gln Val Leu Pro Ala Leu Gln Gln Leu Leu Phe Tyr Gln Gln  
 1025 1030 1035 1040  
 Gln Lys Gln Glu Val Asp Ser Ser Ser Arg Trp Phe Glu Asp Leu Phe  
 1045 1050 1055  
 Gly Asn Lys Ser His Pro Gly Glu Glu Gln Trp Asp Asp Ile Glu Val  
 1060 1065 1070  
 Met Ser Lys Ala Ile Leu Gln Leu Asn Arg Leu Leu Val Glu Val Val  
 1075 1080 1085  
 Asp Asp Pro Met Ser Ile Arg Arg Val Lys Glu Lys Leu Ala Glu Gln  
 1090 1095 1100  
 Leu Ser Glu Gly Tyr Ser Leu Phe Arg Gln Met Asn Arg Glu Leu Leu  
 1105 1110 1115 1120  
 Glu Gly Leu Val Tyr Asp Trp Glu Cys Ile Lys Gln Leu Glu Lys Ser  
 1125 1130 1135  
 Met Leu Gln Leu Leu Gly Val Ser Lys Glu Val Leu His Ala Cys Glu  
 1140 1145 1150  
 Asp Asp Trp Leu Ala Gly Ala Ser Arg Gln Cys Glu Ile Trp Ala Arg  
 1155 1160 1165  
 Asn Thr Asp Lys Leu Lys Asp Trp Tyr Arg Trp Leu Asn Val Ser Arg  
 1170 1175 1180  
 Arg Phe Glu Ala Cys Gly Leu Thr Ser Val Phe Ala Ala Tyr Thr Glu  
 1185 1190 1195 1200  
 Arg Asn Leu Pro Ala Glu Arg Met Met Asn Ile Tyr Leu Lys Gly Phe  
 1205 1210 1215  
 Tyr His Ser Phe Ile Glu Tyr Ala Ile Gly Lys Glu Gln Val Leu Gln  
 1220 1225 1230  
 Phe Phe Asn Gly Glu Leu Phe Asn Asp Ser Ile Arg Arg Phe Arg Glu  
 1235 1240 1245  
 Leu Asn Thr Glu Tyr Gln Glu Leu Ile Lys Lys Glu Leu Tyr Thr Lys  
 1250 1255 1260  
 Leu Ala Ser Asn Ile Pro Ser Phe Val Leu Ala Ala Ala Gln Ser Ser  
 1265 1270 1275 1280  
 Glu Val Gly Ile Leu Gln Lys Cys Ile Arg Ser Asn Gly Arg Gly Met  
 1285 1290 1295  
 Ser Ile Arg Lys Leu Phe Asp Ser Ile Ser Asn Leu Leu Ser Arg Met  
 1300 1305 1310  
 Cys Pro Cys Met Leu Met Ser Pro Met Ser Val Ala Gln Tyr Ile Asn  
 1315 1320 1325  
 Val Asn His Asp Lys Phe Asp Leu Val Val Phe Asp Glu Ala Ser Gln  
 1330 1335 1340  
 Met Pro Thr Cys Glu Ala Val Gly Ala Ile Ala Arg Gly Asn His Val  
 1345 1350 1355 1360  
 Val Val Val Gly Asp Pro Lys Gln Met Pro Pro Thr Asn Phe Phe Thr  
 1365 1370 1375  
 Ser Asn Ser Val Asp Glu Glu His Ile Glu Ile Glu Asp Leu Glu Ser  
 1380 1385 1390  
 Ile Leu Asp Asp Cys Leu Ala Leu Ser Met Pro Ser Lys Tyr Leu Leu  
 1395 1400 1405  
 Trp His Tyr Arg Ser Lys His Glu Ser Leu Ile Ala Phe Ser Lys Ser  
 1410 1415 1420  
 Gln Tyr Tyr Asp Asn Lys Leu Leu Thr Phe Gln Ser Arg Met Ile Trp  
 1425 1430 1435 1440  
 Leu Pro Lys Leu Leu  
 1445

<211> 343  
 <212> PRT  
 <213> B.fragilis

<400> 8668

Ser Val Thr Pro Asn Cys Leu Ile Tyr Ile Lys Ala Ile Lys Met Lys  
 1 5 10 15  
 Asn Tyr Ile Gln Arg Ile Ile Arg Leu Phe Ala Thr Ser Asp Pro Asp  
 20 25 30  
 Pro Lys Leu Thr Gly Glu Ile His Arg Trp Leu Leu Asp Gln Glu His  
 35 40 45  
 Ala Gly Glu Lys Glu Thr Ala Leu His Asp Leu Trp Asn Glu Thr Glu  
 50 55 60  
 Gly Lys Val Asp Arg Thr Thr Trp Asp Ser Leu Ala Ser Val Tyr Thr  
 65 70 75 80  
 Lys Val Gly Ala Asn Ser Gly Asp Arg His Gln Pro Arg Ile Arg Phe  
 85 90 95  
 Ala His Tyr Ala Ala Ala Ile Ala Leu Leu Ile Val Ser Val Ser Val  
 100 105 110  
 Thr Phe Gln Met Thr Lys Gln His Phe Ala Glu Ala Pro Leu Ile Glu  
 115 120 125  
 Asn Ile Thr Pro Asp Gly Arg Leu Ser Ser Leu Arg Leu Pro Asp Gly  
 130 135 140  
 Ser Ile Val Gln Thr Asn Ser Gly Ser Ile Leu Leu Tyr Pro Glu Lys  
 145 150 155 160  
 Phe Lys Gly Glu Thr Arg Thr Val Tyr Leu Ile Gly Glu Ala Asn Phe  
 165 170 175  
 Lys Val Lys Lys Asn Ser Gly Gln Pro Phe Ile Val Arg Ser Gly Thr  
 180 185 190  
 Met Ser Val Thr Ala Leu Gly Thr Glu Phe Asn Val Ala Ala Tyr Pro  
 195 200 205  
 Glu Glu Asn Glu Met Ile Ala Thr Leu Ile His Gly Lys Ile Lys Val  
 210 215 220  
 Glu Cys Asp Asn Gly Lys Glu Ser Tyr Ile Val Thr Pro Gly Gln Gln  
 225 230 235 240  
 Val Thr Tyr Arg Lys Ser Thr Gly Glu Ser Arg Leu Ala Glu Ala Asn  
 245 250 255  
 Ile Glu Asp Val Thr Ala Trp Gln Lys Gly Met Tyr Val Phe Arg Gly  
 260 265 270  
 Val Thr Met Ser Glu Ile Leu Asn Glu Leu Glu Arg Arg Tyr Ala Val  
 275 280 285  
 Thr Phe Gln Tyr Asn Ala Asn Leu Phe Asn Asp Asp Lys Phe Asn Phe  
 290 295 300  
 Arg Phe Arg Glu Lys Ser Thr Leu Glu Asp Ile Leu Asn Ile Met Gln  
 305 310 315 320  
 Glu Val Val Gly Gly Phe Ser His Glu Leu Lys Gly Asn Ile Cys Tyr  
 325 330 335  
 Ile Lys Pro Glu Thr Lys Lys  
 340

<210> 8669  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8669

Met Pro Lys Pro His Trp Val Ile Leu Ala Asn Thr Leu Met Thr Val  
 1 5 10 15  
 Glu Leu Val Met Thr Thr Phe Cys Asn Ser Lys Lys Val Ala Lys Val

	20					25						30					
Ile	Ser	Ser	Thr	Leu	Gly	Leu	Gln	Lys	Val	Lys	Lys	Ser	Ser	Ile	Ser		
	35						40					45					
Val	Ser	Val	Ala	Leu	Gly	Phe	Asp	Ala	Val	Val	Leu	Asn	Pro	Val			
	50					55					60						

<210> 8670  
 <211> 289  
 <212> PRT  
 <213> B.fragilis

<400> 8670

Leu	His	Arg	Pro	Tyr	Val	Ala	Cys	Tyr	Cys	Pro	Asn	Leu	Leu	Arg	Lys		
1				5					10					15			
Arg	Arg	Met	Lys	Ile	Ser	Tyr	His	Leu	Phe	Leu	Thr	Ile	Glu	Ile	Val		
			20					25					30				
Met	Ile	Leu	Phe	Ile	Tyr	Asp	Lys	Thr	Leu	Asp	Gly	Leu	Leu	Thr	Ala		
		35				40					45						
Leu	Phe	Asp	Ala	Tyr	Asn	Arg	Lys	Thr	Phe	Pro	Asp	Val	Leu	Leu	Ser		
	50				55					60							
Lys	Gly	Asp	Thr	Leu	Pro	Leu	Phe	Tyr	Asp	Asp	Ile	Phe	Thr	Val	Ile		
65				70					75						80		
Thr	Asp	Glu	Glu	Lys	Ala	Gly	Arg	Val	Trp	Arg	Gly	Leu	Gln	Lys	Lys		
			85					90					95				
Ile	Ser	Ala	Ser	Ala	Leu	Ser	Ala	Ile	Thr	Trp	Cys	Trp	Leu	Ser	Glu		
			100					105					110				
Leu	Pro	Glu	Val	Gly	Met	Leu	Leu	Phe	Arg	Tyr	Ile	Arg	Lys	Ala	Ile		
		115				120						125					
Asp	Ser	Pro	Val	Ser	Ile	Glu	Thr	Asn	Phe	Gly	Asp	Pro	Asp	Val	Leu		
	130					135				140							
Ala	Leu	Ser	Lys	Ile	Trp	Lys	Arg	Val	Asp	Trp	Glu	Arg	Leu	Arg	Met		
	145				150				155						160		
Leu	Gln	Phe	Val	Arg	Phe	Gln	Lys	Ala	Val	Asp	Gly	Thr	Phe	Phe	Ala		
			165					170						175			
Ala	Phe	Glu	Pro	Gln	His	Asn	Ala	Leu	Pro	Leu	Thr	Val	Gly	His	Phe		
		180					185						190				
Lys	Asp	Arg	Phe	Ala	Asp	Gln	Arg	Trp	Leu	Ile	Tyr	Asp	Met	Lys	Arg		
	195					200						205					
Arg	Tyr	Gly	Phe	Tyr	Tyr	Asp	Leu	His	Thr	Val	Glu	Glu	Val	Thr	Phe		
	210				215						220						
Asp	Asp	Asp	Gly	Gln	Ala	Ala	His	Leu	Ile	Thr	Gly	Met	Leu	Asp	Glu		
	225			230					235					240			
Ser	Leu	Met	Asp	Lys	Asp	Glu	Lys	Leu	Phe	Gln	Gln	Leu	Trp	Lys	Thr		
			245					250						255			
Tyr	Phe	Lys	Ser	Ile	Thr	Ile	Lys	Glu	Arg	Leu	Asn	Pro	Arg	Lys	His		
		260					265						270				
Lys	Gln	Asp	Met	Pro	Val	Arg	Tyr	Trp	Lys	Tyr	Ile	Thr	Glu	Lys	Gln		
	275					280						285					

Lys

<210> 8671  
 <211> 373  
 <212> PRT  
 <213> B.fragilis

<400> 8671

Ile	His	Lys	Phe	Met	Pro	Arg	Thr	Ala	Lys	Lys	Gly	Phe	Thr	Tyr	Tyr		
1				5					10					15			



Gly Phe Asp Thr Asp His Phe Tyr Asp Pro Lys Val Lys Arg Leu Lys  
 20 25 30  
 Asn Lys Phe Gly Met Glu Gly Trp Ala Val Phe His Phe Ile Val Asn  
 35 40 45  
 Glu Ile His Arg Val Glu Gly Tyr Tyr Met Ile Met Asp Ser Asp Gly  
 50 55 60  
 Leu Phe Asp Val Ser Asp Tyr Ser Arg Met Asp Glu Gln Arg Ile Ala  
 65 70 75 80  
 Gly Ile Val Asp Tyr Cys Ala Glu Leu Gly Leu Phe Asp Lys Gly Leu  
 85 90 95  
 Trp Arg Ser Arg Gln Val Leu Thr Ser Glu Glu Ile Gln Asn Arg Tyr  
 100 105 110  
 Met Gly Ile Cys Lys Ser Ile His Arg Lys Pro Ser Ile Ser Asp Asp  
 115 120 125  
 Tyr Leu Leu Leu Asn Ala Ala Ala Pro Ala Ala Thr Ser Ser Pro Gln  
 130 135 140  
 Val Ala Ala Pro Cys Pro Ala Thr His Thr Ala Pro Val Ala Glu Pro  
 145 150 155 160  
 Ala Arg Thr Gly Glu Lys Glu Lys Asp Thr Glu Leu Met Gln Ala Ile  
 165 170 175  
 Ala Asp Phe Lys Arg Arg Leu Gln Glu Pro Glu Ser Ala Ala Gly Val  
 180 185 190  
 Val Arg Glu Glu Ser Gly Ile Ile Arg Glu Asn Arg Pro Gln Asn Lys  
 195 200 205  
 Ile Lys Glu Asn Ile Ser Ser Pro Asn Pro Ser Gly Glu Gly Gly Tyr  
 210 215 220  
 Thr Pro Glu Arg Glu Glu Glu Arg Asn Ser Leu Ser Gly Lys Leu Gln  
 225 230 235 240  
 Tyr Leu Gly Val Asp Ser Asn Ile Ile Gln Trp Val Arg Leu Leu Lys  
 245 250 255  
 Ser Arg Tyr Pro Asp Phe Pro Ile Glu Lys Ala Ile Arg Asp Met Glu  
 260 265 270  
 Gln Ser Asn Phe Gln Leu Thr Lys Glu Asn Tyr Leu Tyr Pro Leu Ile  
 275 280 285  
 Lys Asn Tyr Ile Ala Lys Tyr Asn Ala Glu His Gly Ser Glu Glu Arg  
 290 295 300  
 Ala Arg Gln Gln Glu Lys Ile Leu Arg Thr Arg Lys Thr Leu Glu  
 305 310 315 320  
 Leu Leu Gly Val Pro Val Lys Asp Gln Gln Glu Ile Leu Gln Leu Ala  
 325 330 335  
 Ser Val Ala Pro Leu Val Leu Asp Thr Ala Leu Lys Glu Thr Trp Gly  
 340 345 350  
 Asn Lys Lys Ile Lys Ser Pro Thr Met Phe Leu Leu Ser Arg Met Arg  
 355 360 365  
 Arg Ala Val Pro Ala  
 370

&lt;210&gt; 8672

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8672

Ile Met Asp Thr Glu Ile Leu Arg Lys Lys Tyr Thr Leu Trp Ser Asn  
 1 5 10 15  
 Ile Ile Asp Leu Arg Ser Arg Gly Leu Asn Ile Thr Arg Thr Ala Lys  
 20 25 30  
 Arg Leu Gly Val Ser Arg Asp Thr Val Lys Arg Leu Gln Ser Leu Ser  
 35 40 45

Ser	Asp	Glu	Leu	Phe	Arg	Lys	Tyr	Gln	Glu	Ser	Arg	Arg	Cys	Lys	Leu
50						55					60				
Gln	Asn	Tyr	Glu	Gln	Ala	Val	Val	Ser	Leu	Leu	Phe	Thr	Phe	Pro	Ser
65					70				75					80	
Thr	Ser	Ser	Ser	Arg	Val	His	Asp	Tyr	Leu	Lys	Glu	His	Tyr	Pro	Asp
				85				90						95	
Phe	Pro	Asn	Val	Cys	Asp	Lys	Thr	Val	Arg	Asn	Tyr	Val	Gln	Phe	Ile
			100					105					110		
Arg	Lys	Lys	His	His	Leu	Pro	Phe	Arg	Ser	Cys	Arg	Leu			
		115					120					125			

&lt;210&gt; 8673

&lt;211&gt; 303

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8673

Tyr	Ile	Gly	Thr	Leu	Lys	Ser	Asp	Ser	Trp	Leu	His	Arg	Phe	Leu	His
1				5					10					15	
Asn	Gln	Pro	Leu	Lys	His	Lys	Leu	Tyr	Val	Ile	Ile	Phe	Glu	Ser	Asp
		20						25					30		
Thr	Pro	Ala	Gly	Lys	Ala	Phe	Asp	Val	Thr	Leu	Ile	Ile	Cys	Ile	Leu
		35					40						45		
Leu	Ser	Ile	Leu	Leu	Ala	Ile	Ile	Glu	Ser	Leu	Gln	Gly	Leu	Pro	Ser
	50					55					60				
Trp	Leu	Ser	Thr	Pro	Phe	Ile	Val	Leu	Glu	Tyr	Leu	Phe	Thr	Val	Phe
65					70				75					80	
Phe	Thr	Phe	Glu	Tyr	Val	Thr	Arg	Ile	Tyr	Cys	Ser	Pro	Asn	Pro	Arg
				85				90						95	
Lys	Tyr	Ile	Phe	Ser	Phe	Phe	Gly	Ile	Val	Asp	Leu	Leu	Ala	Thr	Leu
			100					105					110		
Pro	Leu	Tyr	Leu	Ala	Phe	Phe	Leu	Pro	Gly	Ala	Arg	Tyr	Leu	Leu	Ile
		115					120					125			
Ile	Arg	Ala	Phe	Arg	Ile	Ile	Arg	Val	Phe	Arg	Ile	Phe	Lys	Leu	Phe
	130					135						140			
Asn	Phe	Trp	Leu	Glu	Gly	Glu	Arg	Leu	Leu	Thr	Ser	Leu	Arg	Glu	Ser
145					150					155					160
Ser	Lys	Lys	Ile	Ala	Val	Phe	Phe	Leu	Phe	Val	Val	Ile	Leu	Val	Val
				165					170					175	
Ala	Ile	Gly	Thr	Leu	Met	Tyr	Met	Ile	Glu	Gly	Thr	Gln	Pro	Asn	Thr
		180						185					190		
Gln	Phe	Asn	Asn	Ile	Pro	Asn	Ser	Ile	Tyr	Trp	Ala	Ile	Val	Thr	Met
		195					200						205		
Thr	Thr	Val	Gly	Tyr	Gly	Asp	Ile	Thr	Pro	Ala	Thr	Ala	Leu	Gly	Lys
	210					215					220				
Phe	Leu	Ser	Ala	Cys	Val	Met	Leu	Ile	Gly	Tyr	Thr	Ile	Ile	Ala	Val
225					230					235				240	
Pro	Thr	Gly	Ile	Val	Ser	Ala	Ser	Met	Met	Lys	Glu	Tyr	Lys	Lys	Leu
				245					250					255	
Lys	Asp	Leu	Gln	Cys	Pro	Asn	Cys	His	Lys	Thr	Gly	His	Glu	Glu	Asn
		260						265					270		
Ala	Thr	Tyr	Cys	Lys	Tyr	Cys	Gly	His	Lys	Leu	Lys	Asn	Asp	Glu	Ile
		275					280						285		
Tyr	Arg	Gln	Glu	Asn	Thr	Ala	Thr	Asp	Pro	Asp	Arg	Thr	Thr	Ser	
	290					295					300				

&lt;210&gt; 8674

&lt;211&gt; 149

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8674

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Leu Tyr Val Thr Gly Ile Gly Ser Ile Gly Val Asp Thr Tyr Phe Arg
1          5          10          15
Ser Leu Lys Met His Met Lys Lys Phe Ile Leu Ile Thr Leu Thr Leu
20          25          30
Leu Tyr Ala Val Val Ser Ser Gly Ile Thr Ile Asn Phe His Tyr Cys
35          40          45
Met Gly Arg Leu Ala Asp Val Glu Trp Gly Ser Ala Ser Val Cys Ala
50          55          60
Ser Cys Gly Glu Lys Lys Met Thr Ser His Cys Cys Lys Asp Glu Ala
65          70          75          80
His Tyr Val Lys Leu Ala Val Asp Gln Asp Val Asn His Val Pro Val
85          90          95
Thr Asn Leu Leu Pro Ala Val Thr Glu Leu Leu Pro Val Met Tyr Ser
100          105          110
Ala Phe Ile Pro Leu Glu Ala Glu Ser Leu Arg Arg Ser Val Ala Ser
115          120          125
Phe Asn Phe Pro Pro Trp Gln Thr Asp Ile Pro Leu Phe Val His His
130          135          140
Cys Thr Tyr Leu Ile
145

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&lt;210&gt; 8675

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8675

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Met Arg Arg Thr Ser Asp Ile Pro Pro Thr Thr Thr Phe Pro Ile Asp
1          5          10          15
Pro Pro Pro Met Pro Asp Met Ser Leu Pro Glu Glu Leu Pro Ala Glu
20          25          30
Thr Pro Gly Val Pro Ala Gly Ala Gly Leu Pro Ile Pro Pro Ile Pro
35          40          45
Asp Met Pro Leu Pro Glu Glu Ser Ala Gly Gly Ile Glu Ala Thr Asp
50          55          60
Val Thr Glu Val Asp Glu Gly Ala Ala Cys Ala Asp Glu Ala Glu Lys
65          70          75          80
Arg Phe Ser Ala Asn Cys Ser Ser
85

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&lt;210&gt; 8676

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8676

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Lys Ser Thr Thr Gly Ser Thr Ser Ile Tyr Lys Glu Thr Gly Asn Phe
1          5          10          15
Gly Lys Gly Lys Gly Leu Leu His Lys Arg Glu Thr Asn Ala Leu Ser
20          25          30
Lys Gly Arg Lys Arg Pro Val Glu Arg Glu Trp Gln Thr Ser Pro Lys
35          40          45
Gly Lys Ile Ala Arg Pro Lys Glu Gly Ser Gln Pro Ala Glu Glu Lys
50          55          60
Lys Pro Thr Ile
65

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<210> 8677  
 <211> 85  
 <212> PRT  
 <213> B.fragilis

<400> 8677  
 Asn Arg Arg Thr Asp Ala Asp Ser Arg Trp Gly Thr Tyr Pro Pro Glu  
 1 5 10 15  
 Val Arg Phe Ser Pro Pro Val Pro Tyr Gln Met Phe Thr Glu Arg Lys  
 20 25 30  
 Met Ser Val Val Leu Phe Leu Asn Asp Cys Ser Arg Lys Thr Lys Ile  
 35 40 45  
 Leu Ser Phe Arg Ile Asn Lys Pro Thr Gln Lys Asn Glu Thr Cys Phe  
 50 55 60  
 Ala Cys Leu Ser Thr Val Lys Lys Tyr Gly Arg Ser His Ala Ala Leu  
 65 70 75 80  
 Phe Tyr Ser Arg Leu  
 85

<210> 8678  
 <211> 138  
 <212> PRT  
 <213> B.fragilis

<400> 8678  
 Thr Val Asp Ala Ser Arg Gly Glu Trp Arg Tyr Arg Ile Lys Asp Arg  
 1 5 10 15  
 Asn Pro Leu Asn Asn Ser His Met Tyr Phe Ile His Ser Ile Gln Thr  
 20 25 30  
 Tyr Ala Ser Val Asn Arg Lys Gly Ser Glu Leu Gln Glu Tyr Val Leu  
 35 40 45  
 Gln Leu Lys Asp Ser Leu Ile Lys Asn Arg Glu Phe Leu Asp Asp Leu  
 50 55 60  
 Lys Glu Glu Leu His Cys Arg Ile Gly Glu Leu Asp Ala Lys Tyr Pro  
 65 70 75 80  
 Arg Thr Gln Pro Leu His Leu Asp Ala Ala Ser Cys Arg Glu Ile Ile  
 85 90 95  
 Gln Trp Ile Ile His Val Lys Gly Lys Pro Asp Asn Leu Ile Cys Ile  
 100 105 110  
 Ile Ser Ile Thr Lys Val Arg Asn Leu Leu Gly Glu Gly Thr Gly Phe  
 115 120 125  
 Phe Pro Arg Ala Lys Thr Gly Gly Lys Gly  
 130 135

<210> 8679  
 <211> 164  
 <212> PRT  
 <213> B.fragilis

<400> 8679  
 Asn Ala Leu Ala Met Ile Lys Leu Arg Phe Ser Leu Leu Met Ala Leu  
 1 5 10 15  
 Leu Val Val Ala Val Ser Val Phe Ala Asp Asn Ala Pro Ala Lys Val  
 20 25 30  
 Gln Thr Ala Leu Lys Lys Met Tyr Pro Lys Ala Asp Gly Ile Ala Trp  
 35 40 45  
 Ser Gln Asp Gly Gly Tyr Tyr Cys Ala Asp Phe Met Met Asn Gly Tyr  
 50 55 60

Glu Lys Asn Val Trp Phe Asn Ala Gln Gly Gln Trp Gln Met Thr Gln  
 65 70 75 80  
 Thr Glu Trp Gly Asp Thr Asp Glu Leu Ser Ala Thr Val Tyr Asn Ala  
 85 90 95  
 Tyr Ala Ser Gly Pro Tyr Ser Gly Trp Gln Val Glu Asp Val Thr Tyr  
 100 105 110  
 Val Glu Phe Pro Lys Trp Gln Pro Ile Ile Val Ile Lys Val Gly Gln  
 115 120 125  
 Gln Asn Val Asp Ile Gln Tyr Gln Leu Phe Tyr Ser Ser Asn Gly Thr  
 130 135 140  
 Leu Leu Arg Thr Arg Asn Val Ser Tyr Met Asp Asp Ile Leu Gly Pro  
 145 150 155 160  
 Gly Thr Phe Leu

<210> 8680  
 <211> 61  
 <212> PRT  
 <213> B.fragilis

<400> 8680  
 Asn His Thr Ala Met Lys Thr Lys Phe Val Lys Thr Thr Asp Arg Lys  
 1 5 10 15  
 Gly Thr Tyr Ile Ile Glu Gly Ser Ser Asp Gly Gln Phe Phe Asn Ile  
 20 25 30  
 Lys Arg Phe Ile Cys Gln Val Gln Lys Gln Glu Thr Glu Lys Glu Thr  
 35 40 45  
 Gln Glu Leu Ala Asp Phe Ile Leu Ser Lys Leu Asn Ser  
 50 55 60

<210> 8681  
 <211> 119  
 <212> PRT  
 <213> B.fragilis

<400> 8681  
 Ala Val Thr Ala Cys Arg Arg Glu Cys Glu Asn Lys Gln Thr Ile Lys  
 1 5 10 15  
 Asn Pro Ile Leu Ile Lys Met Glu Ile Arg Gly Lys Ile Ile Ala Val  
 20 25 30  
 Leu Pro Val Lys Asp Gly Ile Gly Lys Thr Thr Gly Asn Glu Trp Lys  
 35 40 45  
 Ser Arg Glu Phe Val Leu Glu Thr Glu Glu Ser Lys Pro Gln Ser Val  
 50 55 60  
 Cys Leu Gln Leu Met Asn Ala Asn Ile Glu Arg Tyr Ala Val Glu Val  
 65 70 75 80  
 Gly Met Thr Val His Val Lys Phe Asp Ile Ser Ala Arg Gln Trp Glu  
 85 90 95  
 Asn Arg Trp Phe Asn Thr Leu Thr Ala Trp Glu Val Thr Val Ile Lys  
 100 105 110  
 Gln Lys Glu Glu Gln Pro Ala  
 115

<210> 8682  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8682

Ser Asn Ala Ala Ser Leu Val Ile Leu Ala Met Ile Met Arg Phe Asn  
 1 5 10 15  
 Lys Gly Tyr His Leu Pro Ala Asn Val Gly Ile Lys Val Arg Asn Arg  
 20 25 30  
 Ser Leu Ser Asp Ile Asn Ser Ile Lys Leu Ile Thr Lys Ser His Lys  
 35 40 45  
 Lys Met Lys Met Tyr Pro Val Phe Cys Ala Leu Ile Ala Tyr Leu  
 50 55 60

<210> 8683

<211> 450

<212> PRT

<213> B.fragilis

<400> 8683

Thr Asn Asn Phe Leu Tyr Phe Cys Val Asp Ile Thr Phe Leu Arg Gln  
 1 5 10 15  
 Tyr Asn Arg Lys Leu Asn Ile Ile Met Ala Lys Gln Phe Lys Pro Glu  
 20 25 30  
 Thr Leu Cys Val Gln Ala Gly Trp Thr Pro Lys Lys Gly Glu Pro Arg  
 35 40 45  
 Val Leu Pro Ile Tyr Gln Ser Thr Thr Phe Lys Tyr Glu Thr Ser Glu  
 50 55 60  
 Gln Met Ala Arg Leu Phe Asp Leu Glu Asp Ser Gly Tyr Phe Tyr Thr  
 65 70 75 80  
 Arg Leu Gln Asn Pro Thr Asn Asp Ala Val Ala Ala Lys Ile Ala Ala  
 85 90 95  
 Leu Glu Gly Gly Val Gly Ala Met Leu Thr Ser Ser Gly Gln Ala Ala  
 100 105 110  
 Asn Phe Tyr Ala Ile Phe Asn Ile Cys Gln Ala Gly Asp His Phe Val  
 115 120 125  
 Cys Ser Ser Ala Ile Tyr Gly Gly Thr Phe Asn Leu Phe Gly Val Thr  
 130 135 140  
 Met Lys Lys Leu Gly Ile Asp Val Thr Phe Val Ser Pro Asp Ala Gly  
 145 150 155 160  
 Glu Glu Glu Ile Ser Ala Ala Phe Arg Pro Asn Thr Lys Ala Leu Phe  
 165 170 175  
 Gly Glu Thr Ile Ser Asn Pro Ser Leu Glu Val Leu Asp Ile Glu Lys  
 180 185 190  
 Phe Ala Arg Ile Ala His Ser His Gly Val Pro Leu Ile Val Asp Asn  
 195 200 205  
 Thr Phe Pro Thr Pro Ile Asn Cys Arg Pro Phe Glu Trp Gly Ala Asp  
 210 215 220  
 Ile Val Val His Ser Thr Thr Lys Tyr Met Asp Gly His Ala Thr Ser  
 225 230 235 240  
 Val Gly Gly Cys Ile Val Asp Ser Gly Asn Phe Asp Trp Glu Ala His  
 245 250 255  
 Ala Asp Lys Phe Pro Gly Leu Cys Thr Pro Asp Glu Ser Tyr His Gly  
 260 265 270  
 Leu Thr Tyr Thr Lys Ala Phe Gly Lys Gly Ala Tyr Met Thr Lys Ala  
 275 280 285  
 Thr Ala Gln Leu Met Arg Asp Leu Gly Ser Ile Gln Ser Pro Gln Asn  
 290 295 300  
 Ala Phe Leu Leu Asn Leu Gly Leu Glu Thr Leu His Leu Arg Met Pro  
 305 310 315 320  
 Gln His Cys Gly Asn Ala Gln Lys Val Ala Glu Tyr Leu Ala Gln Asn  
 325 330 335  
 Asp Lys Val Ala Trp Val Asn Tyr Cys Gly Leu Pro Gly Asn Lys Tyr  
 340 345 350

Tyr Glu Leu Ala Gln Lys Tyr Met Pro Asn Gly Ser Cys Gly Val Ile  
 355 360 365  
 Ser Phe Gly Leu Lys Gly Gly Arg Glu Leu Ser Ile Lys Phe Met Asp  
 370 375 380  
 Ser Leu Lys Leu Ala Ala Ile Val Thr His Val Ala Asp Ala Arg Thr  
 385 390 395 400  
 Cys Val Leu His Pro Ala Ser His Thr His Arg Gln Leu Thr Asp Glu  
 405 410 415  
 Gln Leu Ile Glu Ala Gly Val Arg Pro Asp Leu Ile Arg Leu Ser Val  
 420 425 430  
 Gly Ile Glu Asn Ala Asp Asp Ile Ile Ala Asp Ile Glu Gln Ala Leu  
 435 440 445  
 Asn Ala  
 450

<210> 8684  
 <211> 227  
 <212> PRT  
 <213> B.fragilis

<400> 8684  
 Lys Gly Asn Leu Arg Met Met Leu Asn Phe Asp Phe Val Leu Arg Leu  
 1 5 10 15  
 Leu Val Ala Gly Ile Leu Gly Ala Ile Ile Gly Leu Asp Arg Glu Tyr  
 20 25 30  
 Arg Ala Lys Glu Ala Gly Tyr Arg Thr His Phe Leu Val Ser Leu Gly  
 35 40 45  
 Ser Ala Leu Ile Met Ile Val Ser Gln Tyr Gly Phe Gln Glu Ile Ile  
 50 55 60  
 Lys Glu Asn Ser Val Thr Leu Asp Pro Ser Arg Val Ala Ala Gln Val  
 65 70 75 80  
 Val Ser Gly Ile Gly Phe Ile Gly Ala Gly Thr Ile Ile Phe Gln Lys  
 85 90 95  
 Gln Ile Val Arg Gly Leu Thr Thr Ala Ala Gly Ile Trp Ala Thr Ala  
 100 105 110  
 Gly Ile Gly Leu Ala Val Gly Ala Gly Met Tyr Val Ile Gly Ile Ala  
 115 120 125  
 Ala Met Val Leu Thr Leu Ile Gly Leu Glu Val Leu Ser Tyr Leu Phe  
 130 135 140  
 Lys Ser Ile Gly Met Lys Ser Ser Met Ile Thr Phe Ser Thr Asp Asn  
 145 150 155 160  
 Lys Gln Val Leu Lys Gly Val Ala Asp Arg Phe Asn Ser Lys Asp Tyr  
 165 170 175  
 Leu Ile Val Ser Tyr Gln Met Asp Thr Gln Lys His Gly Ser Ile Glu  
 180 185 190  
 Thr Tyr Gln Val Thr Met Ile Ile Lys Ser Lys Arg Asn Asn Asp Glu  
 195 200 205  
 Gly His Leu Leu Ser Leu Ile Gln Glu Phe Pro Glu Val Thr Val Glu  
 210 215 220  
 Arg Ile Glu  
 225

<210> 8685  
 <211> 91  
 <212> PRT  
 <213> B.fragilis

<400> 8685  
 His Gln Ile Leu Met Thr Met Ser Asp Phe Asn Pro Arg Pro Ser Asp

1	5	10	15
Lys Leu Thr Ala Ser Glu Arg Lys Glu Leu Asp Thr Ser Glu Phe Gly			
	20	25	30
Ile Pro Gln Leu Arg Glu Phe Pro Ile His Asp Ala Ala His Val Arg			
	35	40	45
Ala Ala Glu Ala Tyr Phe Arg Tyr Ala Pro Glu Glu Tyr Lys Ala Gln			
	50	55	60
Leu Ala Arg Asn Ile Leu Ala Lys Ala His Leu Glu Gly Val Asn Val			
	65	70	75
Lys Ser Pro Ala Ile Leu Glu Trp Ala Glu Lys			80
	85	90	

&lt;210&gt; 8686

&lt;211&gt; 478

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8686

Ala Pro Ala Tyr Pro Asn Asp Ser Cys Cys Arg Asn Ile Ser Ile Thr			
1	5	10	15
Ile Met Ser Thr Lys His Ala Lys Ala Ala Glu Lys Phe Leu Glu Asn			
	20	25	30
Pro Val Met Ala Ala Trp His Asn Glu Thr Leu Trp Met Val Arg Ala			
	35	40	45
Lys Arg Asp Lys Met Ser Lys Glu Val Pro Glu Trp Glu Glu Leu Arg			
	50	55	60
Asp Lys Ala Cys Ala Leu Lys Leu Tyr Ser Asn Ser His Leu Glu Glu			
	65	70	75
Leu Leu Leu Glu Phe Glu Lys Asn Ala Thr Ala Asn Gly Ala Ile Val			
	85	90	95
His Trp Ala Lys Asp Ala Glu Glu Tyr Arg Ala Ile Val Tyr Glu Ile			
	100	105	110
Leu Ser Ser His Gly Val Lys His Phe Val Lys Ser Lys Ser Met Leu			
	115	120	125
Ala Glu Glu Cys Glu Leu Asn Pro Phe Leu Ile Glu Lys Gly Ile Asp			
	130	135	140
Val Val Glu Ser Asp Leu Gly Glu Arg Ile Leu Gln Leu Met Asn Leu			
	145	150	155
Ala Pro Ser His Ile Val Leu Pro Ala Ile His Ile Lys Arg Glu Gln			
	165	170	175
Val Gly Glu Leu Phe Glu Lys Glu Met Gly Thr Glu Lys Gly Asn Phe			
	180	185	190
Asp Pro Thr Tyr Leu Thr His Ala Ala Arg Lys Asn Leu Arg Asn Ile			
	195	200	205
Phe Leu Asn Ala Glu Ala Ala Met Thr Gly Ala Asn Phe Ala Val Ala			
	210	215	220
Ser Thr Gly Asp Ile Val Val Cys Thr Asn Glu Gly Asn Ala Asp Met			
	225	230	235
Gly Thr Ser Cys Pro Thr Leu Asn Ile Ala Ala Phe Gly Met Glu Lys			
	245	250	255
Ile Val Pro Asp Met Glu Ala Leu Gly Val Phe Thr Arg Leu Leu Ala			
	260	265	270
Arg Ser Ala Thr Gly Gln Pro Ile Thr Thr Tyr Thr Ser Gln Tyr Arg			
	275	280	285
Asn Pro Arg Glu Gly Gly Glu Tyr His Ile Ile Ile Val Asp Asn Gly			
	290	295	300
Arg Ser Ala Leu Leu Ala His Pro Asp His Ile Lys Thr Leu Asn Cys			
	305	310	315
Ile Arg Cys Gly Ala Cys Met Asn Thr Cys Pro Val Tyr Arg Arg Ser			320



325 330 335  
 Gly Gly Tyr Ser Tyr Thr Tyr Phe Ile Pro Gly Pro Ile Gly Ile Asn  
 340 345 350  
 Leu Gly Met Ala His Asp Pro Glu Lys Tyr Tyr Asp Asn Leu Ser Ala  
 355 360 365  
 Cys Ser Leu Cys Met Ser Cys Ser Asp Val Cys Pro Ala Lys Val Asp  
 370 375 380  
 Leu Ala Glu Gln Ile Tyr Lys Trp Arg Gln Asp Leu Asp Lys Ile Gly  
 385 390 395 400  
 Lys Ala Asn Thr Gly Lys Lys Ile Met Ser Gly Gly Met Lys Val Leu  
 405 410 415  
 Met Asp His Pro Thr Leu Phe Asn Ala Ala Leu Trp Ala Ala Pro Val  
 420 425 430  
 Val Asn His Leu Pro Arg Phe Met Lys Tyr Asn Asp Leu Asp Ala Trp  
 435 440 445  
 Gly Lys Gly Arg Glu Leu Pro Lys Phe Ala Gly Glu Ser Phe Asn Glu  
 450 455 460  
 Met Trp Lys Lys Asn Lys Val Gln Gly Lys Glu Glu Asn Lys  
 465 470 475

<210> 8687  
 <211> 95  
 <212> PRT  
 <213> B.fragilis

<400> 8687  
 Lys Leu Leu Tyr Met Ser Phe Ser Gly Phe Val Phe Asp Met Ile Arg  
 1 5 10 15  
 Arg Asn Lys Glu Asn Arg Asp Leu Leu Thr Leu Arg Arg Glu Arg Met  
 20 25 30  
 Lys Asp Leu Gln Gly Lys Met Tyr Arg Lys Gly Thr Leu Gln Asn Pro  
 35 40 45  
 Asn Val Thr Leu Glu Glu Leu Glu Lys Ile Glu Lys Ala Thr Arg Glu  
 50 55 60  
 Lys Glu Lys Ala Glu Thr Gln Tyr Tyr Leu Arg Ala Thr Leu Ile Phe  
 65 70 75 80  
 Leu Thr Val Thr Ala Ile Leu Ala Leu Ile Leu Trp Trp Ile Leu  
 85 90 95

<210> 8688  
 <211> 150  
 <212> PRT  
 <213> B.fragilis

<400> 8688  
 Val Ile Val His Lys Gln Leu Tyr Thr Asn Thr Ile Ala His Pro Pro  
 1 5 10 15  
 Ser Phe Trp His Glu Ala Cys Asn Ile Ile Ile Val Ser Lys Trp Leu  
 20 25 30  
 Thr Glu Lys Gln Thr Ser Phe Ile Asn Leu Lys Leu Thr Ile Met Lys  
 35 40 45  
 Lys Val Leu Val Ala Val Ala Leu Val Met Gly Leu Gly Ser Ser Val  
 50 55 60  
 Ala Phe Ala Gln Asn Ala Glu Asn Ala Asn Ala Val Val Ala Thr Ala  
 65 70 75 80  
 Gln Ala Pro Gln Asp Glu Tyr Thr Lys Ile Glu Val Lys Asp Leu Pro  
 85 90 95  
 Ala Ala Val Thr Glu Ala Leu Gly Lys Ala Tyr Pro Glu Ser Thr Ile  
 100 105 110

Lys Glu Ala Ser Val Thr Thr Lys Glu Glu Gly Lys Phe Tyr Lys Val  
 115 120 125  
 Val Val Thr Gln Lys Asp Gly Thr Asp Val Thr Val Val Leu Asn Glu  
 130 135 140  
 Lys Gly Glu Glu Val Lys  
 145 150

<210> 8689  
 <211> 543  
 <212> PRT  
 <213> B.fragilis

<400> 8689

Lys Lys Thr Gln Asn Val Met Lys Lys Asn Leu Leu Ile Leu Val Ala  
 1 5 10 15  
 Leu Leu Thr Ser Ala Thr Ile Ser Ala Gln Asn Gly Gly Thr Ile Met  
 20 25 30  
 Lys Lys Tyr Glu Asn Gln Leu Pro Gln Ala Gly Arg Gly Asn Val His  
 35 40 45  
 Val Ala Tyr Gln Gly Lys Ala Ile Asp Gln Met Ile Tyr Asp Phe Met  
 50 55 60  
 Glu Glu Gln Gly Ile Pro Gly Met Thr Leu Ala Ile Val Gln Ala Pro  
 65 70 75 80  
 Tyr Ile Pro Arg Val Ala Gly Tyr Gly Val Thr Asp Leu Glu Lys Gly  
 85 90 95  
 Asn Leu Ala Ala Lys Thr Leu Trp Pro Ile Gly Pro Ile Ser Gln  
 100 105 110  
 Gly Tyr Ala Ala Val Ala Val Met Gln Leu Tyr Glu Lys Gly Lys Leu  
 115 120 125  
 Asp Leu Asn Asp Pro Ile Gly Lys Tyr Leu Lys Asp Ile Pro Glu Asn  
 130 135 140  
 Trp Lys Pro Ile Ser Ile Leu Gln Leu Met Gln His Ser Ser Gly Ile  
 145 150 155 160  
 Ala Asp Tyr Arg Asn Glu Lys Gly Phe Asp Val Ser Ala Asp Tyr Arg  
 165 170 175  
 Pro Glu Gln Leu Ile Glu Thr Val Ala Ala Ile Pro Leu Ala Phe Glu  
 180 185 190  
 Pro Gly Thr Asp Val Lys Gln Ser Ala Thr Asn Phe Leu Leu Leu Thr  
 195 200 205  
 Ser Ile Ile Glu Lys Ala Gly Lys Met Ser Tyr His Asp Phe Val Lys  
 210 215 220  
 Lys Tyr Gln Ile Asp Tyr Leu Gly Leu Lys Gln Thr Phe Phe Gly Glu  
 225 230 235 240  
 Asp Leu Ala Lys Val Lys Gln Glu Asp Val Thr Leu Thr Gly Asn Val  
 245 250 255  
 His Gln Thr Phe Lys Lys Asp Lys Asp Tyr Ile Asn Pro Ser Glu Thr  
 260 265 270  
 Thr Thr Gly Tyr Val Glu Lys Glu Gly Arg Leu Val Ala Ala Pro Ala  
 275 280 285  
 Val Ser Pro Thr Ala Leu Lys Gly Phe Ser Asp Ile Trp Ala Ser Ala  
 290 295 300  
 Glu Asn Val Ser His Trp Asp Ile Gly Leu Ala Gly Ser Ala Leu Ile  
 305 310 315 320  
 Glu Lys Pro Glu Asn Arg Asp Met Val Tyr Lys Pro Thr Arg Leu Ala  
 325 330 335  
 Asn Gly Lys Val Val Pro Ala Met Ala Gly Trp Gln Phe Tyr Asn His  
 340 345 350  
 Asn Gly Leu Met Asp Ile Lys Gly Asn Val Ser Gly His Ser Ala Phe  
 355 360 365

Leu Ser Arg Phe Thr Asp Ala Ser Glu Leu Val Cys Val Thr Leu Leu  
 370 375 380  
 Ala Asn Lys Glu Gly Val Asp Leu Thr Asn Leu Gly Arg Arg Ile Ala  
 385 390 395 400  
 Ala Ala Phe Asp Ser Asp Lys Met Gly Thr Gly Ala Asn Asp Asn Leu  
 405 410 415  
 Leu Tyr Thr Tyr Glu Ser Gln Phe Ser Val Pro Glu Thr Met Thr Arg  
 420 425 430  
 Ile Glu Gln Thr Leu His Thr Met Gly Val Pro Val Phe Ala Lys Phe  
 435 440 445  
 Asp His Gly Lys Asn Ala Glu Glu Val Gly Leu Gln Leu Arg Pro Asn  
 450 455 460  
 Gln Val Ile Val Phe Gly Ser Pro Lys Val Gly Thr Lys Leu Met Gln  
 465 470 475 480  
 Asp Asn Pro Ser Ile Ser Ile Glu Leu Pro Leu Lys Ile Ser Val Trp  
 485 490 495  
 Glu Asp Lys Asn Gly Ser Val Trp Ala Thr Phe Pro Gln Met Arg Thr  
 500 505 510  
 Met Ala Ala Glu Tyr Gly Leu Glu Ala Glu Pro Val Ile Gly Lys Met  
 515 520 525  
 Gln Glu Leu Leu Glu Lys Ile Val Ile Lys Gly Ala Ser Val Tyr  
 530 535 540

<210> 8690

<211> 300

<212> PRT

<213> B.fragilis

<400> 8690

Ile Ser His Gln Thr Gln Tyr Asp Met Asn Lys Lys Ser Ser Leu Asn  
 1 5 10 15  
 Asn Leu Leu Tyr Ile Gln Glu His Arg Ser Cys Arg Asn Tyr Leu Glu  
 20 25 30  
 Lys Val Glu Asn Gly Phe Lys Tyr Ile Glu Phe Ser His Glu Glu Val  
 35 40 45  
 Ile Leu Glu Lys Glu Ile Ser Trp Asn Tyr Leu Leu Phe Val Leu Glu  
 50 55 60  
 Gly Glu Cys Ile Ile Asn Cys Asn Gln Phe Arg Glu Arg Leu Phe Gln  
 65 70 75 80  
 Ala Asn Cys Met Val Leu Leu Pro Lys Thr Ala Met Val Glu Ile Lys  
 85 90 95  
 Val Ile Ala Gly Thr Arg Leu Leu Ser Leu Ser Phe Asp Val Pro Leu  
 100 105 110  
 Asn Val Cys Asp Lys Phe Ile Leu Gln Ser Leu Thr Gly Leu Cys Arg  
 115 120 125  
 Lys Leu Asp Tyr Asn Phe Gln Ser Leu Ala Ile Arg Tyr Pro Leu Pro  
 130 135 140  
 Pro Tyr Leu Glu Ile Val Thr Tyr Cys Leu Thr Asn Lys Met Asp Cys  
 145 150 155 160  
 Gly His Phe His Thr Leu Leu Gln Gln Glu Leu Phe Phe Leu Leu Arg  
 165 170 175  
 Gly Phe Tyr Leu Lys Glu Glu Leu Ala Leu Leu Phe His Pro Ile Ile  
 180 185 190  
 Ser Ala Glu Leu Thr Phe Lys Asp Phe Val Ile Gly Asn Tyr Phe Lys  
 195 200 205  
 Val Ser Asn Val Asn Asp Leu Ile Ser Leu Ser Asn Met Cys Lys Ser  
 210 215 220  
 Ser Phe Tyr Cys Lys Phe Lys Glu Val Phe Gly Met Thr Ala Lys Gln  
 225 230 235 240

Trp Leu Leu Lys Gln Arg Asn Thr His Ile Leu Asn Lys Val Met Thr  
 245 250 255  
 Ser Glu Thr Thr Val Gly Glu Leu Met Glu Glu Phe Arg Phe Glu Ser  
 260 265 270  
 Gln Ala His Phe Thr His Tyr Cys Lys Gln His Phe Asn Cys Thr Pro  
 275 280 285  
 Arg Glu Leu Ile Met Lys Tyr Gln Val Val Asn Gln  
 290 295 300

<210> 8691  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8691  
 Leu Asn Gly Gln Thr Ser Gly Glu Cys Asp Ile Val Arg Arg Trp Phe  
 1 5 10 15  
 Thr Trp Arg Ala Phe Arg Ser Glu Ser Pro Leu Tyr Cys Pro Asp Val  
 20 25 30  
 Ile Lys Asn Lys Leu Leu Arg Gly Leu Leu Lys Lys Ser Pro Phe Pro  
 35 40 45  
 Ser His Ile Ile Lys Lys Lys Asp Val Ile Leu His Ala Lys Lys  
 50 55 60

<210> 8692  
 <211> 281  
 <212> PRT  
 <213> B.fragilis

<400> 8692  
 Asn Arg Phe Asn Cys Lys Thr Thr Gln Asp His Leu Ser Ile His Asn  
 1 5 10 15  
 His Tyr Arg Met Ala Lys Lys His Arg Lys Glu Ser Leu Asp Ala Leu  
 20 25 30  
 Phe Arg Glu Lys Val Leu Leu Glu Met Leu Lys Ile Ala Gly Val Gly  
 35 40 45  
 Met Trp Thr Tyr Ser Thr Glu Thr Gly Arg Leu Arg Tyr Ile Gly Phe  
 50 55 60  
 Ala Asp Thr Ile His Arg His Asp Glu Leu Gln Tyr Val Asp Pro Ala  
 65 70 75 80  
 Asp Tyr Leu Lys Leu Met Asn Gly Glu Asp Leu Gln Thr Val Thr Gln  
 85 90 95  
 Phe Met Ala Asp Ile His Ala Gly Arg Pro Pro Gln Glu Gly Ile Arg  
 100 105 110  
 Tyr Lys Ile His Gly Asn Gly Glu Asp Phe Tyr Leu Glu Asn His Val  
 115 120 125  
 Val Thr Cys Gln Pro Leu Gly Asn Gly Phe Tyr Tyr Leu Lys Gly Tyr  
 130 135 140  
 Val Lys Asn Ile Thr Ala Gln Val Met Glu Ala Asn Arg Leu Cys Ile  
 145 150 155 160  
 Glu Lys Glu Arg Thr Glu Gln Ala Asp Arg Leu Arg Ser Ala Phe Phe  
 165 170 175  
 Ala His Val Ser Arg Glu Leu Arg Gly Pro Leu Asn Arg Ile Glu Glu  
 180 185 190  
 Leu Ala Ser Gln Met Val His Ala Glu Ser Val Glu Glu Arg Glu Glu  
 195 200 205  
 Cys Phe His Arg Ile Gln Glu Asn Arg Arg Met Ala Met Lys Ile Ala  
 210 215 220  
 Asp Ala Leu His Ala Val Ser Gln Leu Pro Val Ser Thr Tyr Glu Pro

225                      230                      235                      240  
 Tyr His Ser Pro Met Gln Leu Cys Leu Ile Tyr Arg Asp Leu Leu Met  
                                  245                      250                      255  
 Glu Asn Gly Tyr Ser His Asn Pro Glu Asp Gly Glu Gln Glu Glu Asn  
                                  260                      265                      270  
 Ala Asn Phe Leu Ser Leu Leu Phe Ser  
                                  275                      280

<210> 8693

<211> 519

<212> PRT

<213> B.fragilis

<400> 8693

Asn Lys Ile Lys Ala Arg Ile Thr Met Glu Asp Ile Asn Lys Ala Tyr  
 1                      5                      10                      15  
 Ala Thr Phe Ala Glu Arg Asp Arg Ile Ala Ser Leu Gly Gly Gly Ala  
                                  20                      25                      30  
 Ala Lys Ile Asp Ile Gln His Glu Ser Gly Lys Met Thr Ala Arg Glu  
                                  35                      40                      45  
 Arg Ile Asp Met Leu Leu Asp Lys Gly Thr Phe Val Glu Leu Asp Lys  
                                  50                      55                      60  
 Leu Met Val His Arg Cys Thr Asn Tyr Gly Met Asp Arg Asn Lys Ile  
 65                      70                      75                      80  
 Pro Gly Asp Gly Val Val Ser Gly Tyr Gly Lys Ile Asp Gly Arg Gln  
                                  85                      90                      95  
 Val Phe Val Tyr Ala Tyr Asp Phe Thr Val Tyr Gly Gly Ser Leu Ser  
                                  100                      105                      110  
 Ala Ser Asn Ala Lys Lys Ile Val Lys Val Gln Gln Leu Ala Leu Lys  
                                  115                      120                      125  
 Asn Gly Ala Pro Ile Ile Ala Leu Asn Asp Ser Gly Gly Ala Arg Ile  
                                  130                      135                      140  
 Gln Glu Gly Ile Glu Ser Leu Ser Gly Tyr Ala Asp Ile Phe Tyr Gln  
 145                      150                      155                      160  
 Asn Thr Met Ala Ser Gly Val Ile Pro Gln Ile Ser Ala Ile Leu Gly  
                                  165                      170                      175  
 Pro Cys Ala Gly Gly Ala Cys Tyr Ser Pro Ala Leu Thr Asp Phe Ile  
                                  180                      185                      190  
 Phe Met Val Lys Glu Lys Ser His Met Phe Val Thr Gly Pro Asp Val  
                                  195                      200                      205  
 Val Lys Thr Val Ile His Glu Val Ser Lys Glu Glu Leu Gly Gly  
                                  210                      215                      220  
 Ala Met Thr His Ser Ser Lys Ser Gly Val Thr His Phe Met Ala Asn  
 225                      230                      235                      240  
 Thr Glu Glu Glu Leu Leu Met Ser Ile Arg Glu Leu Leu Ser Phe Leu  
                                  245                      250                      255  
 Pro Gln Asn Asn Met Asp Glu Ala Arg Lys Gln Asn Cys Thr Asp Asp  
                                  260                      265                      270  
 Val Asn Arg Glu Asp Ala Ser Leu Asn Ser Ile Val Pro Ser Asp Pro  
                                  275                      280                      285  
 Asn Val Pro Tyr Asp Met Lys Glu Ile Ile Glu Arg Val Val Asp Gly  
                                  290                      295                      300  
 Gly Tyr Phe Phe Glu Val Met Gln Asn Phe Ala Lys Asn Ile Ile Ile  
 305                      310                      315                      320  
 Gly Phe Ala Arg Met Gly Gly Arg Ser Val Gly Ile Val Ala Asn Gln  
                                  325                      330                      335  
 Pro Ala Tyr Leu Ala Gly Val Leu Asp Ile Asp Ala Ser Asp Lys Ala  
                                  340                      345                      350  
 Ser Arg Phe Ile Arg Phe Cys Asp Cys Phe Asn Ile Pro Leu Ile Thr

355 360 365  
 Phe Glu Asp Val Pro Gly Phe Leu Pro Gly Tyr Thr Gln Glu Asn Asn  
 370 375 380  
 Gly Ile Ile Arg His Gly Ala Lys Ile Val Tyr Ala Phe Ala Glu Ala  
 385 390 395 400  
 Thr Val Pro Lys Leu Thr Val Ile Thr Arg Lys Ala Tyr Gly Gly Ala  
 405 410 415  
 Tyr Ile Val Met Asn Ser Lys Gln Thr Gly Ala Asp Val Asn Phe Ala  
 420 425 430  
 Tyr Pro Ser Ala Glu Ile Ala Val Met Gly Ala Glu Gly Ala Val Asn  
 435 440 445  
 Ile Leu Phe Arg Lys Ala Asp Ala Glu Thr Lys Ala Gln Glu Leu Asn  
 450 455 460  
 Ala Tyr Lys Glu Lys Phe Ala Thr Pro Tyr Gln Ala Ala Glu Leu Gly  
 465 470 475 480  
 Phe Ile Asp Glu Ile Ile Leu Pro Lys Gln Thr Arg Lys Arg Leu Ile  
 485 490 495  
 Gln Ala Leu Glu Met Thr Glu Asn Lys Met Gln Thr Asn Pro Pro Lys  
 500 505 510  
 Lys His Gly Asn Met Pro Leu  
 515

<210> 8694  
 <211> 351  
 <212> PRT  
 <213> B.fragilis

<400> 8694

Ile Lys Asn Lys Lys Glu Phe Lys Met Lys Arg Arg Ile Lys Ser Ala  
 1 5 10 15  
 Gln Ser Ile Leu Trp Val Leu Leu Leu Ile Leu Ser Ala Ser Cys Ser  
 20 25 30  
 Lys Asp Glu Ile Gln Ile Val Asp Gln Asp Thr Ser Trp Gln Met Asp  
 35 40 45  
 Asn Lys Tyr Ile Glu Glu Asp Ile Arg Glu Gln Leu Gly Ile Asp Pro  
 50 55 60  
 Phe Thr Asp Leu Val Tyr Leu Gly Tyr Tyr Gly Asn Pro Tyr Thr Gln  
 65 70 75 80  
 Leu Glu Ala Ile Asn Asp Leu Val Asn Thr Thr Leu Val Gly Lys Asn  
 85 90 95  
 Glu Leu Ser Phe Lys Val Lys Val Thr Lys Pro Tyr Lys Glu Asp Ile  
 100 105 110  
 Lys Val Asn Leu Met Lys Glu Asp Lys Leu Val Thr Asp Phe Pro Glu  
 115 120 125  
 Met Ala Glu Gly Ile Pro Leu Phe Pro Ser Glu Asn Cys Thr Phe Glu  
 130 135 140  
 Gly Gly Val Leu Lys Ala Gly Glu Leu Glu Thr Thr Val Lys Leu Thr  
 145 150 155 160  
 Ile Lys Asp Val Glu Lys Leu Asn Asn Leu Ser Gly Tyr Val Met Ala  
 165 170 175  
 Ile Lys Leu Thr Met Glu Gly Ser His Glu His Leu Ala Ile Ala Arg  
 180 185 190  
 Thr Arg Ser Ala Tyr Phe Val Lys Leu Asn Leu Ser Ile Arg Leu Asp  
 195 200 205  
 Asn Ile Asp Ser Ser Asn Lys Lys Ile Glu Gly Lys Gly Phe Asn Lys  
 210 215 220  
 Glu Ile Ser Phe Lys Ser Asp Ile Arg Pro Asp Lys Leu Gly Ser Leu  
 225 230 235 240  
 Asn Asp Gly Asn Phe Thr Ala Asn Asn Trp Tyr Thr Ser Asn Ala Asn

				245					250					255			
Asn	Tyr	Leu	Thr	Ile	Ile	Leu	Pro	Glu	Lys	Gln	Ser	Leu	Lys	Gly	Phe		
			260					265					270				
Arg	Leu	Asp	Thr	Asn	Thr	Ser	Pro	Ser	Gly	Ser	Tyr	Met	Leu	Lys	Ser		
		275					280					285					
Cys	Arg	Val	Met	Val	Glu	Thr	Pro	Asp	Gly	Asn	Trp	Val	Asn	His	Gly		
	290					295					300						
Val	Phe	Asp	Arg	Lys	Ser	Met	Asp	Gly	Ile	Ala	Tyr	Ile	Ser	Phe	Lys		
305					310					315					320		
Lys	Pro	Val	Glu	Cys	Thr	Lys	Val	Arg	Phe	Glu	Asn	Met	Met	Ala	Phe		
				325					330					335			
Asn	Gly	Arg	Phe	Ser	Val	Asp	Val	Asn	Glu	Val	Thr	Ala	Phe	Arg			
		340						345					350				

&lt;210&gt; 8695

&lt;211&gt; 1094

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8695

Asn	Ser	Phe	Lys	Ser	Met	Asn	Phe	Tyr	Arg	Leu	Lys	Ser	Ile	Phe	Phe		
1				5					10					15			
Ile	Ile	Phe	Ser	Cys	Phe	Ile	Leu	Gln	Thr	Ala	Ala	Phe	Ala	Gln	Asn		
			20					25					30				
Asn	Val	Lys	Ile	Thr	Ile	Lys	Lys	Asn	Ile	Thr	Leu	Gln	Glu	Ala			
	35					40					45						
Leu	Arg	Glu	Val	Glu	Lys	Gln	Ser	Asp	Tyr	Leu	Ile	Ala	Phe	Asn	Glu		
	50				55					60							
Ser	Lys	Leu	Glu	Lys	Thr	Lys	Arg	Val	Asn	Leu	Asn	Ile	Asn	Ala	Glu		
65				70					75						80		
Ser	Leu	Asp	Lys	Thr	Leu	Ala	Ser	Ile	Leu	Ser	Gly	Thr	Gly	Leu	Ser		
			85					90						95			
Tyr	Lys	Ile	Lys	Asp	Lys	Tyr	Ile	Met	Ile	Ile	Pro	Gln	Ser	Lys	Val		
			100					105					110				
Glu	Val	Glu	Ser	Lys	Lys	Leu	Ser	Gly	Ile	Val	Lys	Asp	Asp	Lys	Gly		
	115					120						125					
Asp	Pro	Leu	Ile	Gly	Val	Asn	Val	Ser	Phe	Lys	Gly	Ser	Pro	Thr	Gly		
	130					135					140						
Thr	Val	Thr	Gly	Leu	Asp	Gly	Arg	Phe	Ser	Ile	Leu	Ala	Ala	Lys	Gly		
145				150						155					160		
Asn	Ile	Ile	Glu	Phe	Ser	Tyr	Val	Gly	Tyr	Thr	Thr	Gln	Tyr	Ile	Thr		
			165					170						175			
Val	Gly	Asp	Ala	Ser	Ser	Leu	Thr	Val	Val	Leu	Glu	Glu	Asp	Ala	Lys		
		180						185					190				
Ala	Leu	Asp	Glu	Val	Val	Val	Thr	Ala	Leu	Gly	Ile	Lys	Arg	Ala	Glu		
	195						200					205					
Lys	Ala	Leu	Ser	Tyr	Ser	Val	Gln	Gln	Val	Lys	Ser	Asp	Ala	Ile	Asn		
	210					215						220					
Asp	Val	Lys	Asp	Ala	Asn	Phe	Val	Asn	Gly	Leu	Thr	Gly	Lys	Val	Ala		
225				230					235						240		
Gly	Val	Ser	Ile	Asn	Arg	Ser	Ser	Ser	Gly	Ile	Gly	Gly	Ala	Thr	Arg		
			245					250						255			
Val	Val	Met	Arg	Gly	Ala	Lys	Ser	Ile	Val	Gly	Asn	Asn	Asn	Val	Leu		
		260						265					270				
Tyr	Val	Val	Asp	Gly	Met	Pro	Ile	Gly	Asn	Pro	Ser	Lys	Gly	Glu	Ile		
	275					280						285					
Asn	Asn	Asp	Tyr	Ser	Thr	Pro	Gly	Gly	Gly	Glu	Gly	Ile	Ser	Asp	Phe		
	290				295					300							
Asn	Pro	Glu	Asp	Ile	Glu	Ser	Leu	Ser	Ile	Leu	Thr	Gly	Pro	Ala	Ala		

[illegible]



Asn Asn Lys Ile Asn Ile Asp Ala Thr Val Tyr Leu Thr Asp Thr Tyr  
 785 790 795 800  
 Asn Gln Thr Phe Leu Ser Ser Met Ser Pro Ala Ser Gly Tyr Ser Gly  
 805 810 815  
 Phe Tyr Val Gln Ala Gly Lys Val Arg Asn Lys Gly Ile Glu Leu Ser  
 820 825 830  
 Leu Gly Tyr Asn Asp Arg Phe Gly Lys Val Gly Tyr Ala Thr Asn Leu  
 835 840 845  
 Thr Tyr Thr Ala Asn Arg Asn Lys Ile Met Lys Met Val His Asp Tyr  
 850 855 860  
 Lys Asn Pro Ser Asp Gly Ser Leu Phe Ser Ile Thr Glu Leu Thr Leu  
 865 870 875 880  
 Gln Asp Lys Gly Gly Val Tyr Leu Arg Glu Lys Asp Ala Ile Gly Asp  
 885 890 895  
 Val Tyr Val Lys Gly Ile Leu Ala Arg Gly Lys Asp Gly Lys Leu Ile  
 900 905 910  
 Glu Glu Glu Gly Gly Tyr Lys Val Asp Arg Ser Gln Arg Ile Lys Ile  
 915 920 925  
 Gly Ser Val Asn Pro Asp Phe Ser Ile Gly Trp Arg His Asn Val Thr  
 930 935 940  
 Trp Asn Asn Ile Thr Leu Asp Leu Leu Phe Asn Gly Arg Phe Gly Gly  
 945 950 955 960  
 Ile Val Thr Ser Ser Thr Gln Ala Phe Leu Asp Asp Tyr Gly Val Ser  
 965 970 975  
 Lys Asp Thr Tyr Lys Ala Arg Gln Asn Gly Gly Val Trp Val Asn Gly  
 980 985 990  
 Thr Gln Tyr Asp Ala Glu Lys Tyr Tyr Thr Thr Ile Gly Gly Glu Gln  
 995 1000 1005  
 Leu Met Ala Tyr Tyr Ala Tyr Lys Ala Thr Asn Ile Arg Leu Gln Glu  
 1010 1015 1020  
 Ala Ser Leu Ser Tyr Thr Leu Pro Gly Lys Trp Phe Ala His Val Ile  
 1025 1030 1035 1040  
 Asn Arg Leu Thr Val Ser Ala Ile Gly Arg Asn Leu Trp Met Ile Tyr  
 1045 1050 1055  
 Asn Lys Ala Pro Phe Leu Ile Gln Ile Thr Ser Ser Thr Gly Thr Tyr  
 1060 1065 1070  
 Asn Arg Gly Asp Val Phe Met Pro Pro Ser Leu Arg Ser Val Gly Phe  
 1075 1080 1085  
 Ser Val Lys Ile Glu Leu  
 1090

<210> 8696  
 <211> 98  
 <212> PRT  
 <213> B.fragilis

<400> 8696  
 Ser Thr Cys Phe Ala Val Arg Ser Ala Ser Glu Lys Thr Ala Met Leu  
 1 5 10 15  
 Val Ile Ser Ile Ser Arg Gln Glu Arg Ile Thr Leu Thr Ala Ile Ser  
 20 25 30  
 Pro Arg Leu Ala Thr Lys Ile Leu Leu Ile Ile Phe Ile Ser Gln Leu  
 35 40 45  
 Asn Ala Tyr Thr Tyr Ser Arg Phe Ser Thr Leu Arg Thr Tyr Val His  
 50 55 60  
 Pro Met Lys Thr Gln Tyr Phe Tyr Asp Leu Gly Leu Asn Asn Asp Ala  
 65 70 75 80  
 Phe Phe Pro Asn Pro Arg Gly Glu Asn Ala Leu Ile His Glu Trp Gln  
 85 90 95

Val Phe

&lt;210&gt; 8697

&lt;211&gt; 179

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8697

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Met Ile Leu Asn Asn Glu Ser Asn Lys Lys Lys Lys Phe Glu Gln Phe
1           5           10           15
Phe Ile Met Thr Tyr Pro Lys Val Lys Ala Phe Ala Trp Lys Leu Leu
          20           25           30
Lys Ser Glu Glu Asp Ala Glu Asp Ile Ala Gln Asp Ile Phe Ala Lys
          35           40           45
Leu Trp Thr Asn Pro Glu Ile Trp Glu Asn Gln Glu Thr Trp Asn Ser
          50           55           60
Tyr Ile Tyr Thr Met Val Arg Asn His Ile Tyr Asn Phe Leu Lys His
65           70           75           80
Lys Ser Ile Arg Gln Thr Tyr Gln Glu Gln Cys Thr Lys Glu Glu Pro
          85           90           95
Ala Ile Ser Glu Thr Asp Ile His Asp Gln Leu Tyr Ala Lys Glu Ser
          100          105          110
Glu Leu Leu Ile Lys Leu Thr Ile Ala Asn Met Pro Glu Gln Arg Arg
          115          120          125
Lys Ile Phe Arg Met Ser Arg Thr Gln Glu Lys Ser Asn Gln Glu Ile
          130          135          140
Ala Asp Glu Leu Asp Ile Ser Ile Arg Thr Val Glu Arg His Ile Tyr
145          150          155          160
Leu Ala Leu Ile Asp Leu Lys Lys Val Leu Leu Thr Leu Phe Phe Phe
          165          170          175
Tyr Leu Gly

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&lt;210&gt; 8698

&lt;211&gt; 769

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8698

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Pro Leu Leu Lys Arg Ile Ile Met Ala Lys Ile Thr Lys Glu Ala Ala
1           5           10           15
Leu Leu Tyr His Ser Gln Gly Lys Pro Gly Lys Ile Glu Val Val Pro
          20           25           30
Thr Lys Pro Tyr Ser Thr Gln Thr Asp Leu Ser Leu Ala Tyr Ser Pro
          35           40           45
Gly Val Ala Glu Pro Cys Leu Glu Ile Glu Lys Asn Pro Gln Asp Ala
          50           55           60
Tyr Lys Tyr Thr Ala Lys Gly Asn Leu Val Ala Val Ile Ser Asn Gly
65           70           75           80
Thr Ala Val Leu Gly Leu Gly Asp Ile Gly Ala Leu Ser Gly Lys Pro
          85           90           95
Val Met Glu Gly Lys Gly Leu Leu Phe Lys Ile Tyr Ala Gly Ile Asp
          100          105          110
Val Phe Asp Ile Glu Val Asn Glu Lys Asp Pro Asp Lys Phe Ile Glu
          115          120          125
Ala Val Lys Ala Ile Ala Pro Thr Phe Gly Gly Ile Asn Leu Glu Asp
          130          135          140
Ile Lys Ala Pro Glu Cys Phe Glu Ile Glu Arg Arg Leu Lys Glu Glu

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145	150	155	160
Leu Asp Ile Pro Val Met His Asp Asp Gln His Gly Thr Ala Ile Ile			
	165	170	175
Ser Ser Ala Gly Leu Val Asn Ala Leu Gln Val Ala Gly Lys Lys Ile			
	180	185	190
Glu Asp Val Lys Ile Val Val Asn Gly Ala Gly Ala Ser Ala Val Ser			
	195	200	205
Cys Thr Lys Leu Tyr Val Ser Leu Gly Ala Arg Leu Glu Asn Ile Val			
	210	215	220
Met Leu Asp Ser Lys Gly Val Ile Ser Lys Ala Arg Thr Asp Leu Asn			
	225	230	235
Glu Gln Lys Arg Tyr Phe Ala Thr Asp Arg Thr Asp Ile His Thr Leu			
	245	250	255
Ala Glu Ala Ile Lys Asp Ala Asp Val Phe Leu Gly Leu Ser Lys Gly			
	260	265	270
Asn Thr Leu Ser Gln Asp Met Val Arg Ser Met Ala Pro Met Pro Ile			
	275	280	285
Val Phe Ala Leu Ala Asn Pro Thr Pro Glu Ile Ser Tyr Glu Asp Ala			
	290	295	300
Met Ala Ala Arg Pro Asp Val Leu Met Ala Thr Gly Arg Ser Asp Tyr			
	305	310	315
Pro Asn Gln Ile Asn Asn Val Ile Gly Phe Pro Tyr Ile Phe Arg Gly			
	325	330	335
Ala Leu Asp Thr Gln Ala Lys Ala Ile Asn Glu Glu Met Lys Ile Ala			
	340	345	350
Ala Val His Ala Ile Ala Asn Leu Ala Lys Gln Pro Val Pro Asp Val			
	355	360	365
Val Asn Glu Ala Tyr His Val Asn Asn Phe Thr Phe Gly Pro Glu Tyr			
	370	375	380
Phe Ile Pro Lys Pro Val Asp Pro Arg Leu Ile Thr Glu Val Ser Ile			
	385	390	395
Ala Val Ala Arg Ala Ala Met Glu Ser Gly Val Ala Arg Lys Asn Ile			
	405	410	415
Glu Asn Trp Asp Asp Tyr Lys Thr His Leu Arg Glu Leu Met Gly Gln			
	420	425	430
Glu Ser Gln Leu Thr Arg Gln Leu Tyr Asp Thr Ala Arg Arg Asn Pro			
	435	440	445
Gln Arg Val Val Phe Ala Glu Gly Gly His Pro Asn Met Leu Lys Ala			
	450	455	460
Ala Val Glu Ala Lys Ser Glu Gly Ile Cys His Pro Ile Ile Leu Gly			
	465	470	475
Asn Glu Glu Arg Ile Glu Lys Leu Ala Lys Glu Leu Asp Leu Ser Leu			
	485	490	495
Asp Gly Ile Glu Ile Ile Asn Leu Arg His Asp Arg Glu Ala Glu Arg			
	500	505	510
Arg Glu Arg Tyr Ala His Ile Leu Ser Gln Lys Arg Ala Arg Glu Gly			
	515	520	525
Ala Thr Tyr Glu Glu Ala Asn Asp Lys Met Phe Glu Arg Asn Tyr Phe			
	530	535	540
Gly Met Met Met Val Glu Thr Gly Asp Ala Asp Ala Phe Ile Thr Gly			
	545	550	555
Leu Tyr Thr Lys Tyr Ser Asn Thr Ile Lys Val Ala Lys Glu Val Ile			
	565	570	575
Gly Ile Arg Pro Glu Tyr Lys His Phe Gly Thr Met His Ile Leu Asn			
	580	585	590
Ser Lys Lys Gly Thr Tyr Phe Leu Ala Asp Thr Leu Ile Asn Arg His			
	595	600	605
Pro Asp Thr Ser Thr Leu Ile Asp Ile Ala Lys Leu Ala Asp Gln Thr			
	610	615	620

145 150 155 160  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395  
 405 410 415  
 420 425 430  
 435 440 445  
 450 455 460  
 465 470 475  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555  
 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620

Val Arg Phe Phe Asn His Thr Pro Val Ile Ser Met Leu Ser Tyr Ser  
 625 630 635 640  
 Asn Phe Gly Ser Asp Gln Ala Gly Ser Pro Leu Lys Val His Glu Ala  
 645 650 655  
 Val Ala Tyr Met Gln Gln Glu Tyr Pro Glu Leu Ala Ile Asp Gly Glu  
 660 665 670  
 Met Gln Val Asn Phe Ala Met Asn Arg Glu Leu Arg Asp Ser Lys Tyr  
 675 680 685  
 Pro Phe Thr Arg Leu Asn Gly Lys Asp Val Asn Thr Leu Val Phe Pro  
 690 695 700  
 Asn Leu Ser Ser Ala Asn Ala Gly Tyr Gln Leu Leu Gln Ala Met Asp  
 705 710 715 720  
 Pro Asp Thr Glu Phe Ile Gly Pro Ile Gln Met Gly Leu Asn Lys Pro  
 725 730 735  
 Ile His Phe Thr Asp Ile Glu Ser Ser Val Arg Asp Ile Val Asn Ile  
 740 745 750  
 Thr Ala Val Ala Val Ile Asp Ala Ile Val Glu Lys Lys Lys Ala Asn  
 755 760 765  
 Lys

<210> 8699

<211> 317

<212> PRT

<213> B.fragilis

<400> 8699

Leu Ile Leu Lys Thr Lys Lys Asp Leu Ile Ser Trp Cys Phe Ser Ile  
 1 5 10 15  
 Phe Leu Leu Val Leu Lys Leu Asn Arg Ile Gln Thr Ile Met Gln Lys  
 20 25 30  
 Leu Asn Gln Gln Pro Asp Ile Cys Pro Tyr Phe Ser Pro Glu Phe Lys  
 35 40 45  
 Val Ile Pro Gln Tyr Ile Ile Met Lys Glu Gly Glu Cys Met Glu Leu  
 50 55 60  
 Asn Asn Arg Thr Thr Ser Phe Phe Ile Phe Ile Leu Ser Gly Glu Ile  
 65 70 75 80  
 Thr Ile Ser Phe Glu Gln Tyr Thr Asn Arg Ser Val Leu Glu Asn Glu  
 85 90 95  
 Met Phe Phe Leu Pro Lys Asn Asn Cys Phe Lys Trp Lys Ala Val Thr  
 100 105 110  
 Gln Thr Val Leu Ile Leu Thr Gly Tyr Asn Ala Thr Ile Phe Pro Cys  
 115 120 125  
 Thr Ser Val Arg Ala Arg Ile Leu Tyr Lys Ile Lys Ala Gly Val Lys  
 130 135 140  
 Phe Asp Cys Arg Gly Val Val Met Lys Asp Glu Val Lys Val Val Val  
 145 150 155 160  
 Asn Gln Met Lys His Tyr Leu Glu Ser Gly Ile Asn Cys His His Met  
 165 170 175  
 Tyr Ile Leu Lys His Lys Glu Leu Tyr Leu Met Phe Lys His Phe Tyr  
 180 185 190  
 Thr Tyr Glu Glu Ile Ile Gln Ile Phe Tyr Leu Ile Leu Gly Ser Asn  
 195 200 205  
 Pro Leu Phe Asn Glu Arg Val Leu Asp Asn Tyr Leu Lys Val Lys Thr  
 210 215 220  
 Val Lys Glu Leu Ala Gly Leu Leu Gly Tyr Gly Ile Lys Thr Phe Glu  
 225 230 235 240  
 Lys Leu Phe Arg Glu Asn Phe Asp Glu Ser Pro Tyr Lys Trp Met Gln  
 245 250 255

Lys Arg Lys Ala Leu Gln Ile Gln Gln Arg Leu Met Asn Pro Ala Ile  
 260 265 270  
 Ser Leu Lys Gln Ile Met Tyr Glu Phe Lys Phe Ala Thr Ser Ser His  
 275 280 285  
 Phe Asn Phe Tyr Cys Lys Gln His Leu Gly Ala Ala Pro Met Gln Ile  
 290 295 300  
 Arg Asn Ser Asn Lys Asp Asp Asn Met Ser Thr Leu Pro  
 305 310 315

<210> 8700

<211> 770

<212> PRT

<213> B.fragilis

<400> 8700

Thr Ser Ile Lys Arg Asn Glu Val Leu Thr Lys Tyr Thr Tyr His Thr  
 1 5 10 15  
 Met Ser His Leu Pro Thr Leu Ile Ala Asp Leu Ala Leu Ile Leu Met  
 20 25 30  
 Ser Ala Ser Ile Ile Thr Leu Leu Phe Lys Trp Leu Lys Gln Pro Leu  
 35 40 45  
 Val Leu Gly Tyr Ile Val Ala Gly Leu Leu Ala Gly Pro Tyr Val Arg  
 50 55 60  
 Ile Phe Pro Thr Val Gly Asp Met Glu Asn Ile Asn Thr Trp Ala Glu  
 65 70 75 80  
 Ile Gly Val Val Phe Leu Leu Phe Ala Leu Gly Leu Glu Phe Ser Phe  
 85 90 95  
 Lys Lys Leu Met Asn Val Gly Ser Ala Ala Phe Ile Thr Ala Thr Thr  
 100 105 110  
 Glu Val Ile Ser Met Leu Leu Ile Gly Phe Met Val Gly His Leu Leu  
 115 120 125  
 Gly Trp Ser Thr Met Asn Ser Val Phe Leu Gly Gly Met Leu Ser Met  
 130 135 140  
 Ser Ser Thr Thr Ile Ile Ile Lys Ala Phe Asp Asp Leu Gly Leu Arg  
 145 150 155 160  
 Ser Gln Arg Phe Thr Gly Ile Val Phe Gly Thr Leu Val Val Glu Asp  
 165 170 175  
 Leu Ile Ala Ile Leu Met Met Val Ile Leu Ser Thr Met Ala Val Ser  
 180 185 190  
 Lys Glu Phe Val Gly Glu Glu Leu Leu Met Ser Val Leu Lys Val Ala  
 195 200 205  
 Phe Phe Leu Ile Leu Trp Phe Leu Val Gly Ile Phe Ile Leu Pro Phe  
 210 215 220  
 Phe Leu Lys Lys Ala Lys Arg Leu Met Asn Asn Glu Thr Leu Leu Ile  
 225 230 235 240  
 Val Ser Leu Gly Leu Cys Leu Ala Met Val Val Leu Ala Thr Arg Thr  
 245 250 255  
 Gly Phe Ser Ala Ala Leu Gly Ala Phe Ile Met Gly Ser Ile Leu Ala  
 260 265 270  
 Glu Thr Val Glu Ala Glu His Ile Glu His Ile Ile Gln Pro Val Lys  
 275 280 285  
 Asp Leu Phe Gly Ala Ile Phe Phe Val Ser Val Gly Met Leu Val Asn  
 290 295 300  
 Pro Ser Val Leu Leu Gln Tyr Ala Trp Pro Val Val Ile Ile Thr Leu  
 305 310 315 320  
 Val Thr Leu Val Gly Lys Ser Ile Phe Ser Ser Leu Gly Val Leu Leu  
 325 330 335  
 Ser Gly Glu Pro Leu Lys Val Ser Val Lys Ser Gly Phe Ser Leu Ala  
 340 345 350

Gln Ile Gly Glu Phe Ala Phe Ile Ile Ala Gly Leu Gly Ala Ser Leu  
 355 360 365  
 Lys Val Leu Asp Pro Phe Val Pro Pro Ile Ile Val Ala Val Ser Val  
 370 375 380  
 Ile Thr Thr Phe Thr Thr Pro Tyr Phe Ile Arg Leu Ala Asn Pro Phe  
 385 390 395 400  
 Ser Glu Trp Leu Tyr Lys Val Leu Ser Pro Arg Thr Arg Glu Phe Leu  
 405 410 415  
 Asp Arg Tyr Ala Ser Gly Lys Lys Thr Val Asn His Asp Ser Asp Trp  
 420 425 430  
 Lys Arg Leu Leu Lys Thr Ile Val Gly Arg Val Ile Ile Tyr Ser Val  
 435 440 445  
 Leu Leu Thr Ala Ile Trp Leu Leu Ser Val Gln Thr Val Tyr Pro Thr  
 450 455 460  
 Ile Asn Gly Met Phe Asp Ser Pro Gly Arg Trp Leu Ser Val Val Met  
 465 470 475 480  
 Cys Leu Leu Thr Leu Leu Leu Met Thr Pro Phe Leu Trp Ala Leu Val  
 485 490 495  
 Ser Asp Lys Tyr Asn Ser Pro Asp Val Phe Leu Lys Leu Trp Asn Asp  
 500 505 510  
 Asp Asn Tyr Asn His Gly Arg Leu Val Ala Leu Ile Leu Phe Arg Val  
 515 520 525  
 Ser Val Ala Val Phe Phe Ile Ala Gly Val Val Ile Ser Tyr Phe Ser  
 530 535 540  
 Leu Asn Tyr Gly Ile Gly Ile Val Ile Ala Val Ala Val Leu Gly Leu  
 545 550 555 560  
 Ile Leu Leu Leu Arg Glu Asn Leu Thr Gln Tyr Ser His Leu Glu Asn  
 565 570 575  
 His Phe Leu Thr Asn Leu Asn Gly Arg Glu Glu Ala Ala Arg Asn Arg  
 580 585 590  
 Tyr Pro Leu Lys Ser Arg Phe Asn Ser Glu Phe Ser Asp Lys Asp Ile  
 595 600 605  
 Glu Leu Thr Ser Val Trp Val Ser Pro Tyr Ser Ser Tyr Ile Gly Lys  
 610 615 620  
 Ser Leu Glu Glu Leu Pro Phe Arg Arg Glu Phe Gly Val Asn Val Val  
 625 630 635 640  
 Gly Ile Val Arg Gly Glu Arg Arg Ile Tyr Ile Pro Gln Ser Asp Glu  
 645 650 655  
 Cys Ile Tyr Pro Gln Asp Lys Leu Ile Val Val Gly Thr Asp Gly Gln  
 660 665 670  
 Leu Gln Lys Phe Arg Ser Glu Leu Asp Ile Arg Gln Asp Phe Pro Asp  
 675 680 685  
 Glu Lys Asn Val Arg Gln Glu Val Thr Leu His Ser Phe Thr Val Asp  
 690 695 700  
 Glu Glu Ser Pro Leu Leu Asn Lys Ser Ile Ala Gln Ser Arg Leu Gly  
 705 710 715 720  
 Lys Gln Tyr Asp Ser Leu Ile Val Ala Ile Glu Arg Glu Asp Glu Leu  
 725 730 735  
 Ile Ser Met Asn Gln Ser Thr Val Phe Arg Leu Gly Asp Leu Val Trp  
 740 745 750  
 Ile Val Gly Asp Arg Glu Lys Ile Arg Gln Leu Leu Met Arg Lys Lys  
 755 760 765  
 His Val  
 770

&lt;210&gt; 8701

&lt;211&gt; 121

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8701

Tyr Arg Ile Asn Met Lys Thr Leu Phe Leu Gln Tyr Pro Ala Cys Ser  
 1 5 10 15  
 Thr Cys Gln Lys Ala Lys Lys Trp Leu Thr Glu Asn Asn Ile Glu Tyr  
 20 25 30  
 Thr Asn Arg Leu Ile Val Asp Asp Asn Pro Thr Val Glu Leu Lys  
 35 40 45  
 Ala Trp Ile Pro Leu Ser Gly Leu Pro Val Lys Lys Phe Phe Asn Thr  
 50 55 60  
 Ser Gly Val Val Tyr Lys Glu Leu Lys Leu Ser Ser Lys Leu Pro Thr  
 65 70 75 80  
 Met Thr Glu Glu Glu Gln Ile Ala Leu Leu Ala Thr Asn Gly Lys Leu  
 85 90 95  
 Val Lys Arg Pro Leu Val Val Thr Glu Arg Phe Val Leu Val Gly Phe  
 100 105 110  
 Lys Pro Glu Glu Trp Glu Lys Leu Lys  
 115 120

&lt;210&gt; 8702

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8702

Tyr Lys Ile Lys Tyr Leu Tyr Tyr Leu Leu Ile Arg Ile Glu Val Leu  
 1 5 10 15  
 Glu His Glu Ile Gln Phe Phe Met Phe Gln Asn Val His Met Met Thr  
 20 25 30  
 Val Tyr Ser Gly Leu Lys Ile Met Leu His Leu Ile His Tyr Tyr Phe  
 35 40 45  
 Asp Phe Val Leu His His Tyr Ser Thr Ala Ile Glu Leu His Ala Gly  
 50 55 60  
 Leu Tyr Phe Ile  
 65

&lt;210&gt; 8703

&lt;211&gt; 277

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8703

Glu Leu Thr Lys Ala Thr Lys His Pro Ile Met Phe Gly Trp Phe Asn  
 1 5 10 15  
 Ala Trp Gln Pro Asp Gly Ala Gly Lys Tyr Pro Arg Leu Ser Leu Leu  
 20 25 30  
 Pro Asp Ser Met Asp Val Val Ser Ile Trp Gly Asn Trp His Ser Leu  
 35 40 45  
 Ser Glu Glu Lys Ile Lys Glu Leu Arg Ser Val Gln Ala Lys Gly Thr  
 50 55 60  
 Lys Val Ile Ile Gly Trp Ile Ile Glu Asp Ile Gly Asp Gln Ile Lys  
 65 70 75 80  
 Trp Gly Arg Asp Gln Trp Pro Ala Asp Asp Thr Gln Ala Ile Lys Glu  
 85 90 95  
 Tyr Ala Gln Ala Ile Val Asp Thr Ile Asn Lys Tyr Gly Tyr Asp Gly  
 100 105 110  
 Phe Asp Tyr Asp Tyr Glu Pro Ser Tyr Ala Ser Pro Phe Lys Pro Gly  
 115 120 125  
 Asn His Cys Gly Asn Leu Thr Ser Cys Ser Arg Asp Tyr Asn Lys Glu

116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

130		135		140
Lys Glu Ile Leu Phe Met	Lys Thr Met Arg Glu Leu Leu Gly Pro Asp			
145		150		160
Lys Leu Phe His Leu Asn Gly Ser Ile His Trp Leu Asp Pro Arg Ala				
		165		175
Ala Gln Tyr Phe Asp Arg Phe Val Val Gln Ser Tyr Asn Gly Ser Ala				
		180		190
Ser Ser Phe Glu Arg Trp Thr Asn Asp Ile Gln Asn Arg Leu Asn Ile				
		195		205
Lys Pro Glu Gln Leu Val Phe Thr Glu Ser Phe Gln Asn Lys Pro Gly				
		210		220
Ala Arg Ser Arg Phe Pro Gly Thr Tyr Ala Gly Tyr Val Ala Ser Lys				
225		230		240
Gln Gly Asn Val Gly Gly Ile Gly Val Phe His Ile Asn Glu Asp Ala				
		245		255
Phe Glu Asp Glu Ala Tyr Val Asn Ile Arg Lys Ala Ile Ser Ile Met				
		260		270
Asn Pro Pro Val Lys				
		275		

&lt;210&gt; 8704

&lt;211&gt; 296

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8704

Phe Thr Lys Lys Thr Tyr Phe Cys Arg Gln Asn Lys Glu His Asp Met	
1	5 10 15
Glu Lys Arg Asn Pro Leu Thr Leu Thr Leu Asp Gln Pro Phe Val Ala	
	20 25 30
Gly Thr Asp Asp Phe Ser Pro Phe Tyr Asn Arg Leu His Lys Leu Asn	
	35 40 45
Cys Ala Ile Ile Leu Tyr Cys Arg Ala Gly Arg Gly Thr Met Ala Ile	
	50 55 60
Asp Leu Lys Lys Tyr Glu Ile Thr Val Asn Thr Gln Val Val Leu Leu	
65	70 75 80
Pro Gly Ala Val Ile Ser Leu Asp Glu Lys Ser Asp Asp Phe Arg Val	
	85 90 95
Ser Phe Phe Ala Ser His Ile Glu Met Phe Arg Glu Ala Cys Ile Arg	
	100 105 110
Phe Glu Pro Ser Phe Phe His Phe Ile Lys Glu Lys Pro Cys Tyr Thr	
	115 120 125
Leu Pro Ser Glu Phe Thr Ala Pro Ile Asn Gly Leu Leu His Ala Thr	
	130 135 140
Ser Ala Ile Tyr Ala Asp Thr Asp His Arg Phe Arg Asn Gln Ile Ala	
145	150 155 160
Arg Asn His Leu Gln Ser Phe Leu Leu Asp Val Tyr Asp Lys Val His	
	165 170 175
Arg Leu Phe Thr His Lys Glu Ile Glu Gly Gly Ser Arg Pro Asn Glu	
	180 185 190
Leu Phe His Lys Phe Val Ala Leu Val His Glu Tyr Cys Cys Ser Gln	
	195 200 205
Arg Asp Val Val Phe Tyr Ala Gly Lys Leu Cys Ile Ser Thr Lys Tyr	
	210 215 220
Leu Thr Ser Ile Cys Arg Ser Leu Thr Gly His Ser Ala Lys Lys Val	
225	230 235 240
Ile Asp Asp Phe Thr Ala Leu Glu Ile Lys Val Leu Leu Gln Ser Thr	
	245 250 255
Asp Leu Ser Ile Gln Glu Ile Ala Asp Arg Leu Asn Phe Pro Asp Gln	



	260		265		270										
Ser	Tyr	Leu	Gly	Arg	Tyr	Phe	Lys	Arg	His	Glu	Gly	Val	Ser	Pro	Met
	275						280					285			
Glu	Tyr	Arg	Ala	Glu	Leu	Ala	Gly								
	290						295								

<210> 8705  
 <211> 194  
 <212> PRT  
 <213> B.fragilis

<400> 8705

Asn	Ser	Lys	Lys	Val	Ile	Met	Leu	Lys	Ile	Leu	Val	Thr	Tyr	Ala	Val
1				5					10					15	
Gln	Gly	Glu	Phe	Thr	Glu	Ile	Lys	Trp	Pro	Asp	Val	Glu	Val	Tyr	Tyr
			20					25				30			
Val	Arg	Thr	Gly	Ile	Gly	Lys	Val	Lys	Ser	Ala	Phe	His	Leu	Ser	Glu
		35					40					45			
Ala	Ile	Gln	Gln	Val	Lys	Pro	Asp	Ile	Val	Ile	Asn	Gln	Gly	Thr	Ala
	50					55					60				
Gly	Thr	Ile	Asn	His	Gln	Val	Gly	Asp	Val	Phe	Val	Cys	Arg	His	Phe
65					70					75					80
Val	Asp	Arg	Asp	Met	His	Lys	Met	Thr	Gly	Leu	Gly	Met	Glu	Tyr	Arg
				85					90					95	
Ile	Asp	Ser	Ser	Glu	Leu	Leu	Ala	Ala	Arg	Gly	Phe	Cys	Gln	His	Trp
			100					105					110		
Thr	Glu	Ser	Ala	Thr	Cys	Asn	Thr	Gly	Asp	Ser	Phe	Leu	Thr	Glu	Leu
		115					120					125			
Thr	Asp	Ile	Glu	Gly	Asp	Val	Val	Asp	Met	Glu	Ala	Tyr	Ala	Gln	Ala
	130					135					140				
Phe	Val	Cys	Arg	Ala	Lys	Glu	Ile	Pro	Phe	Ile	Ser	Val	Lys	Tyr	Val
145					150					155					160
Ser	Asp	Val	Ile	Gly	Gln	Asn	Ser	Val	Lys	His	Trp	Glu	Asp	Arg	Leu
				165					170					175	
Glu	Asp	Ala	Arg	Ala	Gly	Leu	Ser	His	Phe	Phe	Asn	Val	Leu	Lys	Glu
			180					185					190		
Ser	Ile														

<210> 8706  
 <211> 394  
 <212> PRT  
 <213> B.fragilis

<400> 8706

Gln	Arg	Lys	Lys	Asn	Pro	Met	Ile	Ile	Arg	Thr	Ile	Leu	Asp	Thr	Asp
1				5					10					15	
Leu	Tyr	Lys	Phe	Thr	Thr	Ser	Tyr	Ala	Tyr	Ile	Lys	Leu	Phe	Pro	Tyr
			20					25				30			
Ala	Ile	Gly	Thr	Phe	Ser	Phe	Lys	Asp	Arg	Asp	Gly	Thr	Glu	Tyr	Ser
		35					40					45			
Asp	Glu	Phe	Val	Glu	Arg	Leu	Arg	Thr	Glu	Ile	Asn	Gln	Leu	Ser	His
	50					55					60				
Val	Thr	Leu	Thr	Glu	Lys	Glu	Leu	Glu	Tyr	Met	Ile	Lys	Asn	Cys	Arg
65					70					75					80
Phe	Leu	Pro	Arg	Val	Tyr	Trp	Glu	Trp	Leu	Ser	Ser	Phe	Arg	Phe	Gln
				85					90					95	
Pro	Glu	Lys	Ile	Glu	Ile	Arg	Leu	Asp	Glu	Asn	Arg	Gln	Leu	His	Ile
			100					105					110		

Glu Val Asn Asp Tyr Leu Tyr Lys Ala Thr Leu Tyr Glu Val Pro Leu  
 115 120 125  
 Leu Ala Ile Val Ser Glu Ile Lys Asn Gln Ser Ser Gly Asn Val Ala  
 130 135 140  
 Asn Leu Glu Asp Ile Leu Tyr Lys Leu Ser Glu Lys Thr Glu Leu Ser  
 145 150 155 160  
 Asn Lys His Gln Leu Phe Ser Glu Phe Gly Thr Arg Arg Arg Phe  
 165 170 175  
 Ser Phe Asp Val Gln Asn Gln Val Ile Gly His Leu Lys Gln Thr Ala  
 180 185 190  
 His Tyr Cys Ile Gly Thr Ser Asn Cys His Phe Ala Met Lys Tyr Gly  
 195 200 205  
 Met Lys Pro Met Gly Thr His Pro His Glu Trp Phe Met Phe His Gly  
 210 215 220  
 Ala Gln Phe Gly Tyr Lys His Ala Asn Tyr Met Ala Leu Glu Asn Trp  
 225 230 235 240  
 Val Asn Val Tyr Asp Gly Asp Leu Gly Ile Ala Leu Ser Asp Thr Tyr  
 245 250 255  
 Thr Ser Ala Ile Phe Leu Ser Asn Leu Ser Arg Lys Gln Ala Lys Leu  
 260 265 270  
 Phe Asp Gly Val Arg Cys Asp Ser Gly Asp Glu Phe Arg Phe Ile Asp  
 275 280 285  
 Gln Leu Thr Ala Arg Tyr Lys Glu Leu Gly Ile Asp Pro Thr Thr Lys  
 290 295 300  
 Thr Ile Val Phe Ser Asn Ala Leu Asp Phe Gly Lys Ala Leu Asp Ile  
 305 310 315 320  
 Gln Lys Tyr Cys Arg Gly Lys Ile Arg Cys Ser Phe Gly Ile Gly Thr  
 325 330 335  
 Asn Leu Thr Asn Asp Thr Gly Phe Lys Pro Ser Asn Ile Val Met Lys  
 340 345 350  
 Leu Ser Gln Cys Lys Met Asn Met Asn Gln Glu Trp Arg Glu Cys Val  
 355 360 365  
 Lys Leu Ser Asp Asp Ile Gly Lys His Ile Gly Ser Pro Glu Glu Val  
 370 375 380  
 Arg Ala Cys Leu Tyr Asp Leu Arg Leu Glu  
 385 390

&lt;210&gt; 8707

&lt;211&gt; 228

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8707

Lys Gln Lys Lys Ile Met Glu Gly Ile Asn Thr Pro Phe Val Ile Asp  
 1 5 10 15  
 Glu His Thr Ala Ile Val Met Thr Asp Pro Gln Asn Asp Phe Leu Ser  
 20 25 30  
 Glu Asn Gly Leu Gly Trp Gly Ala Phe Gly Glu Asn Ile Gln Lys Asn  
 35 40 45  
 Gly Thr Val Glu Asn Leu Arg Arg Ile Phe Glu Val Ala Ala Lys  
 50 55 60  
 Gly Met Leu Val Phe Ile Ser Pro His Tyr Tyr Lys His Asp His  
 65 70 75 80  
 Gln Trp Leu Phe Glu Gly Pro Ile Glu Lys Leu Met His Asp Thr Gly  
 85 90 95  
 Met Phe Glu Arg Arg Gly Gln Leu Thr Gly Glu Gly Phe Glu Gly Ser  
 100 105 110  
 Gly Ala Asp Trp Leu Asp Leu Tyr Lys Pro Tyr Ile Asn Glu Gly Thr  
 115 120 125

Asn Ile Ile Val Thr Ala Pro His Lys Leu Tyr Gly Pro Glu Asn Asn  
 130 135 140  
 Asp Leu Ile Leu Gln Leu Arg Lys Arg Gly Val Asn Lys Val Val Val  
 145 150 155 160  
 Cys Gly Met Ser Gly Asn Leu Cys Ala Glu Ser His Leu Arg Glu Leu  
 165 170 175  
 Gln Glu Arg Gly Phe Glu Ala Ala Val Val Phe Asp Ala Thr Ala Ser  
 180 185 190  
 Ala Lys Leu Pro Gly Met Asp Ala Asp Thr Ala Ala Phe Ile Asn Phe  
 195 200 205  
 Thr Leu Leu Ala Glu Lys Val Tyr Thr Thr Asp Glu Phe Val Asn Glu  
 210 215 220  
 Met Arg Gln Arg  
 225

<210> 8708  
 <211> 182  
 <212> PRT  
 <213> B.fragilis

<400> 8708

Phe Met Arg Lys Ile Asn Glu Ile Phe Tyr Ser Leu Gln Gly Glu Gly  
 1 5 10 15  
 Tyr His Thr Gly Thr Pro Ala Val Phe Ile Arg Phe Ser Gly Cys Asn  
 20 25 30  
 Leu Lys Cys Asp Phe Cys Asp Thr Arg His Glu Glu Gly Glu Met Met  
 35 40 45  
 Thr Asp Glu Asp Ile Val Asn Glu Ile Gly Lys Tyr Pro Ala Val Met  
 50 55 60  
 Val Ile Leu Thr Gly Gly Glu Pro Ser Leu Trp Ile Asp Asp Ala Phe  
 65 70 75 80  
 Ile Asp Leu Leu His Arg Ala Gly Lys Tyr Val Cys Ile Glu Thr Asn  
 85 90 95  
 Gly Thr Lys Pro Leu Pro Ala Ala Ile Asp Trp Val Thr Cys Ser Pro  
 100 105 110  
 Lys Gln Gly Val Asn Leu Ala Leu Asn Arg Met Asp Glu Val Lys Val  
 115 120 125  
 Val Tyr Gly Gly Gln Asn Ile Asp Val Tyr Glu Gln Leu Pro Ala Glu  
 130 135 140  
 His Phe Phe Leu Gln Pro Cys Ser Cys Asn Asn Thr Ala Glu Thr Val  
 145 150 155 160  
 Asp Cys Val Met Arg His Pro Lys Trp Arg Leu Ser Leu Gln Thr His  
 165 170 175  
 Lys Leu Ile Asn Ile Leu  
 180

<210> 8709  
 <211> 366  
 <212> PRT  
 <213> B.fragilis

<400> 8709

Lys Arg Leu Lys Ile Met Lys Lys Lys Phe Thr Ile Phe Val Met Leu  
 1 5 10 15  
 Leu Ala Gly Ile Ile Tyr Thr Gly His Ala Gln Gly Val Gln Trp Ile  
 20 25 30  
 Tyr Gln Gln Lys Gln Glu Lys Lys Asn Met Lys Asn Leu Ser Glu Ile  
 35 40 45  
 Tyr Phe Ala Gly Gly Cys Phe Trp Gly Thr Asp His Phe Leu Lys Gln

50		55		60
Ile Arg Gly Val Lys Ser Thr Gln Val Gly Tyr Ala Asn Gly Asn Ile				
65		70		80
Ala Asn Pro Thr Tyr Gln Gln Val Cys Thr Gly Lys Thr Asn Phe Ala				
	85		90	95
Glu Thr Val Lys Val Glu Tyr Asn Pro Gln Glu Val Pro Leu Lys Leu				
	100		105	110
Leu Ile Asp Leu Phe Phe Lys Thr Ile Asp Pro Thr Ser Leu Asn Arg				
	115		120	125
Gln Gly Asn Asp Lys Gly Ser Gln Tyr Arg Ile Gly Ile Tyr Tyr Thr				
	130		135	140
Asp Glu Val Asp Leu Pro Thr Ile Arg Thr Ala Ile Asp Glu Leu Ala				
	145		150	155
Lys Glu Tyr Ser Lys Pro Ile Val Ile Glu Val Lys Pro Leu Ser Asn				
	165		170	175
Phe Tyr Lys Ala Glu Glu Tyr His Gln Asp Tyr Leu Asp Lys Asn Pro				
	180		185	190
Gly Gly Tyr Cys His Ile Asn Pro Ala Leu Phe Glu Leu Ala Lys Lys				
	195		200	205
Ala Asn Ala Gln Ala Glu Gln Pro Gln Thr Asn Tyr Lys Lys Pro Asp				
	210		215	220
Asp Ala Thr Leu Arg Ser Lys Leu Thr Pro Glu Gln Tyr Ala Val Thr				
	225		230	235
Gln Lys Asn Ala Thr Glu Pro Ala Phe His Asn Glu Tyr Trp Asp Glu				
	245		250	255
Lys Arg Asp Gly Ile Tyr Val Asp Ile Thr Thr Gly Glu Pro Leu Phe				
	260		265	270
Ile Ser Thr Asp Lys Phe Asp Ser Gly Cys Gly Trp Pro Ser Phe Thr				
	275		280	285
Lys Pro Ile Glu Lys Glu Val Ile Lys Glu Lys Met Asp Thr Ser His				
	290		295	300
Gly Met Ile Arg Thr Glu Val Arg Ser Lys Thr Gly Asp Ala His Leu				
	305		310	315
Gly His Val Phe Thr Asp Gly Pro Lys Glu Lys Gly Gly Leu Arg Tyr				
	325		330	335
Cys Ile Asn Ser Ala Ser Leu Arg Phe Ile Pro Lys Glu Lys Met Lys				
	340		345	350
Glu Glu Gly Tyr Gly Glu Tyr Leu Lys Leu Leu Pro Gln Lys				
	355		360	365

<210> 8710  
 <211> 248  
 <212> PRT  
 <213> B.fragilis

<400> 8710  
 Tyr Ile Met Lys Val Gly Leu Phe Ile Pro Cys Tyr Ile Asn Ala Ile  
 1 5 10 15  
 Tyr Pro Gln Val Gly Val Ala Ser Tyr Lys Leu Leu Lys Asn Leu Gly  
 20 25 30  
 Val Asp Val Asp Tyr Pro Leu Asp Gln Thr Cys Cys Gly Gln Pro Met  
 35 40 45  
 Ala Asn Ala Gly Phe Gln Asp Glu Ser Leu Lys Met Ala Ile Arg Phe  
 50 55 60  
 Asp Asp Leu Phe Arg Lys Tyr Asp Tyr Ile Val Gly Pro Ser Ala Ser  
 65 70 75 80  
 Cys Val Ala Phe Val Lys Glu Asn His Pro Gly Ile Leu Ala Lys Glu  
 85 90 95  
 Gly His Gln Cys Gln Ser Ala Gly Lys Ile Tyr Asp Leu Cys Ala Phe

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<210> 8711
<211> 405
<212> PRT
<213> B.fragilis
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Asn	Thr	Met	Lys	Ser	Ile	Leu	Leu	Ser	Val	Ile	Ser	Phe	Leu	Leu	Val
1				5					10					15	
Met	Asn	Val	Cys	Gly	Lys	Asn	Asp	Val	Asp	Met	Arg	Thr	Tyr	Leu	Lys
			20					25					30		
Lys	Val	Leu	Gly	Asn	Leu	Gly	Lys	Ile	Glu	Ser	Ala	Ser	Tyr	His	Glu
		35					40					45			
Gln	Ser	Gln	Ser	Trp	Gln	Pro	Gly	Asp	Thr	Val	Ala	Ile	Thr	Asn	Phe
	50					55					60				
His	Arg	Phe	Ile	Lys	Glu	Tyr	Thr	Asn	Pro	Ser	Asp	Ser	Thr	Ile	Gly
65				70						75				80	
Ala	Ser	Tyr	Val	Cys	Leu	Asp	Ala	Lys	Asp	Thr	Thr	Arg	Phe	Glu	Phe
				85					90					95	
Gly	Tyr	Asp	Gly	Asn	Val	Arg	Met	Ile	Ser	Tyr	His	Glu	His	Lys	Gly
			100					105					110		
Ile	Met	Ile	Asp	Asp	Phe	Thr	Thr	Arg	Ser	Leu	Pro	Phe	Arg	Leu	Val
		115					120					125			
Ala	Pro	Pro	Phe	Phe	Cys	Tyr	Thr	Arg	Asn	Ile	Ile	Gly	Tyr	Ala	Leu
	130					135					140				
Ser	Thr	Gly	Asp	Ser	Ile	Thr	Thr	Glu	Trp	Lys	Asp	Leu	Gly	Glu	Ala
145				150						155				160	
Tyr	Tyr	Phe	Lys	Leu	Val	Ile	His	Glu	Asp	Arg	Gln	Val	Glu	Phe	Phe
			165						170					175	
Gly	Lys	Ala	Tyr	Tyr	Ile	Pro	Lys	Pro	Pro	Phe	Asp	Leu	Gly	Asp	Pro
			180					185					190		
Thr	Ser	Ile	Tyr	Glu	Leu	Trp	Ile	Ser	Lys	Ala	Asp	Gly	Leu	Pro	Tyr
		195					200					205			
Lys	Met	Arg	Arg	Glu	Met	Ser	His	Gln	Ile	Ser	Ala	Thr	Thr	Cys	Ser
	210					215					220				
Asp	Val	Val	Leu	Asn	Gln	Leu	Ser	Ile	Ala	Gly	Leu	Asn	Leu	Tyr	Asp
225				230						235				240	
Tyr	Val	Pro	Gln	Asp	Tyr	Glu	Ile	Arg	Lys	Tyr	Gly	Glu	Gln	Lys	Lys
			245						250					255	
Val	Thr	Gln	Pro	Ala	Ala	Thr	Asp	Leu	Ile	Gly	Gln	Lys	Ala	Pro	Asp

[illegible]

260 265 270  
 Trp Met Leu Lys Asp Met Tyr Glu Lys Pro Val Ala Leu Ser Glu Phe  
 275 280 285  
 Lys Ser Lys Val Leu Leu Val Asn Leu Thr Gly Ile Gly Cys Gly Ala  
 290 295 300  
 Cys His Ala Ser Ile Pro Phe Leu Asn Gly Leu Lys Gly Lys Phe Asn  
 305 310 315 320  
 Ala Gly Glu Phe Glu Val Val Ser Ile Glu Thr Trp Gly Arg Glu Pro  
 325 330 335  
 His Ser Leu Arg Thr Tyr Ala Asp Lys Asn Gln Ile Asn Tyr Ser Phe  
 340 345 350  
 Leu Cys Gly Asp Glu Gly Ile Val Lys Ser Tyr Arg Thr Tyr Gly Ala  
 355 360 365  
 Ala Pro Leu Phe Phe Ile Leu Asp Gln Asp Arg Val Ile Arg Lys Val  
 370 375 380  
 Ile Arg Gly Tyr Arg Met Gly Arg Thr Asp Glu Glu Ile Thr Asp Ala  
 385 390 395 400  
 Ile Lys Ala Leu Leu  
 405

<210> 8712

<211> 477

<212> PRT

<213> B.fragilis

<400> 8712

Thr Ser Met Lys Lys Leu Ile Ile Ser Leu Ala Ala Ile Leu Ala Leu  
 1 5 10 15  
 Ser Ser Cys Gly Ile Tyr Ser Lys Tyr Lys Pro Val Thr Lys Ile Pro  
 20 25 30  
 Asp Gly Leu Tyr Gly His Glu Gly Thr Asp Thr Pro Gly Leu Thr Ser  
 35 40 45  
 Ala Asp Pro Glu Ile Gln Arg Ser Asp Thr Ala Ala Asn Phe Gly Asn  
 50 55 60  
 Leu Ser Trp Arg Glu Val Phe Thr Asp Pro Tyr Leu Arg Val Leu Ile  
 65 70 75 80  
 Asp Ser Ala Leu Val Arg Asn Thr Asp Leu Arg Thr Ala His Leu Arg  
 85 90 95  
 Val Lys Glu Ala Glu Ala Thr Leu Leu Ser Ala Arg Leu Ser Tyr Leu  
 100 105 110  
 Pro Ala Phe Ser Leu Ser Pro Gln Gly Thr Ala Ser Ser Phe Asp Gly  
 115 120 125  
 Gly Lys Ala Thr Gln Thr Tyr Ser Leu Pro Val Ser Ala Ser Trp Glu  
 130 135 140  
 Ile Asp Ile Phe Gly Arg Leu Thr Asn Ala Lys Arg Arg Ala Gln Ala  
 145 150 155 160  
 Val Val Ala Gln Ser Arg Asp Tyr Glu Gln Ala Val Gln Thr Gln Leu  
 165 170 175  
 Ile Ala Ala Val Ala Asn Asn Tyr Phe Thr Leu Leu Met Leu Asp Ala  
 180 185 190  
 Gln Ile Glu Ile Ser Thr Ala Thr Glu Ala Ala Trp Lys Glu Ser Val  
 195 200 205  
 Ala Thr Thr Arg Ala Met Lys Ala Ala Gly Met Val Thr Glu Ala Ala  
 210 215 220  
 Leu Ser Gln Thr Glu Ala Thr Tyr Tyr Asn Ile Cys Thr Thr Leu Leu  
 225 230 235 240  
 Asp Leu Gln Glu Gln Leu Asn Gln Ala Glu Asn Ala Leu Ser Leu Leu  
 245 250 255  
 Leu Ala Asp Val Pro His Arg Ile Pro Arg Gly Arg Leu Ala Asp Gln

260					265					270					
Gln	Leu	Pro	Glu	Asn	Leu	Ser	Val	Gly	Val	Pro	Leu	Gln	Ile	Leu	Ser
275					280					285					
Asn	Arg	Pro	Asp	Val	Arg	Ser	Ala	Glu	Gln	Ser	Leu	Ala	Gln	Ala	Phe
290					295					300					
Tyr	Thr	Thr	Asn	Ala	Ala	Arg	Ser	Ala	Phe	Tyr	Pro	Ser	Ile	Thr	Leu
305	310					315					320				
Ser	Gly	Ser	Ala	Gly	Trp	Thr	Asn	Ser	Ala	Gly	Ala	Met	Ile	Val	Asn
325					330					335					
Pro	Gly	Lys	Phe	Leu	Ala	Thr	Ala	Val	Ala	Ser	Leu	Thr	Gln	Pro	Leu
340					345					350					
Phe	Asn	Arg	Gly	Ala	Asn	Ile	Ala	Gln	Leu	Arg	Ile	Ala	Lys	Ala	Gln
355					360					365					
Gln	Glu	Glu	Ala	Arg	Leu	Ser	Phe	Glu	Gln	Thr	Leu	Leu	Asn	Ala	Gly
370					375					380					
Ser	Glu	Val	Asn	Asn	Ala	Leu	Val	Gln	Tyr	Gln	Thr	Ala	Arg	Asp	Lys
385	390					395					400				
Ser	Ala	Tyr	Phe	Asn	Arg	Gln	Val	Ala	Ser	Leu	Glu	Asn	Ala	Ala	Arg
405					410					415					
Ser	Thr	Gln	Leu	Leu	Met	Lys	His	Gly	Asn	Thr	Thr	Tyr	Leu	Glu	Val
420					425					430					
Leu	Thr	Ala	Gln	Gln	Thr	Leu	Leu	Asn	Ala	Gln	Leu	Ser	Gln	Val	Ala
435					440					445					
Asn	Arg	Phe	Thr	Glu	Ile	Gln	Gly	Val	Ile	Thr	Leu	Tyr	Gln	Ala	Leu
450					455					460					
Gly	Gly	Gly	Arg	Glu	Thr	Ala	Ser	Gly	Glu	Arg	Asn	Ser			
465	470					475									

&lt;210&gt; 8713

&lt;211&gt; 320

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8713

Asn	Lys	Met	Lys	Asp	Leu	Leu	Asp	Lys	Ile	Phe	Pro	Thr	Leu	Ser	Asp
1	5			10			15								
Glu	Leu	Ile	Ile	Val	Ile	Ser	Leu	Ile	Ile	Gly	Leu	Leu	Val	Thr	Ala
20			25			30									
Ser	Leu	Ile	Leu	Phe	Leu	Val	Lys	Ile	Phe	Pro	Lys	Thr	Asn	Ile	
35			40			45									
Ser	Glu	Leu	Ala	Ala	Arg	Thr	Arg	Ser	Trp	Trp	Ile	Met	Ala	Gly	Met
50			55			60									
Phe	Ile	Gly	Ala	Val	Phe	Ile	Ser	Tyr	Asn	Ile	Ser	Tyr	Phe	Phe	Leu
65	70			75			80								
Ala	Phe	Leu	Ser	Phe	Ile	Ala	Phe	Arg	Glu	Leu	Tyr	Ser	Val	Leu	Gly
85			90			95									
Phe	Arg	Glu	Ala	Asp	Arg	Gly	Ala	Leu	Phe	Trp	Gly	Ile	Leu	Ala	Ile
100			105			110									
Pro	Ile	Gln	Tyr	Tyr	Leu	Ala	Tyr	Leu	Ala	Trp	Tyr	Gly	Ala	Phe	Ile
115			120			125									
Ile	Phe	Ile	Pro	Val	Val	Met	Phe	Leu	Val	Leu	Pro	Leu	Arg	Leu	Val
130			135			140									
Leu	Lys	Gly	Asp	Thr	His	Gly	Ile	Thr	Lys	Ser	Met	Ala	Leu	Leu	Gln
145	150			155			160								
Trp	Ile	Leu	Met	Leu	Ser	Val	Phe	Gly	Ile	Ser	His	Leu	Ala	Tyr	Leu
165			170			175									
Leu	Ser	Leu	Pro	Glu	Leu	Pro	Gly	Phe	Ser	Ser	Gly	Gly	Arg	Gly	Leu
180			185			190									
Leu	Leu	Phe	Leu	Val	Phe	Leu	Thr	Glu	Ile	Asn	Asp	Val	Met	Gln	Phe

195	200	205
Ile Trp Gly Lys Leu Leu Gly	Arg His Lys Ile Leu	Pro Lys Ile Ser
210	215	220
Pro Asn Lys Thr Trp Glu Gly	Phe Leu Gly Gly Val	Ile Ser Thr Thr
225	230	235
Val Ile Gly Tyr Phe Leu Gly	Phe Leu Thr Pro Leu	Ser Ala Pro Asn
	245	250
Val Ile Leu Val Ser Ala Leu	Ile Ala Gly Phe Ser	Gly Asp
	260	265
Val Val Ile Ser Ala Ile Lys	Arg Asp Lys Gly Ile	Lys Asp Met Gly
	275	280
Asn Ser Ile Pro Gly His Gly	Gly Val Phe Asp Arg	Ile Asp Ser Leu
	290	295
Ala Tyr Thr Ala Pro Val Phe	Phe His Leu Val Tyr	Tyr Ile Ala Tyr
305	310	315
		320

&lt;210&gt; 8714

&lt;211&gt; 443

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8714

Lys Leu Met	Lys Thr Asp Leu Ile Tyr Gly	Ile Glu Asp Arg Pro	Pro
1	5	10	15
Phe Lys Asp	Ala Leu Phe Ala Ala Leu Gln His	Leu Leu Ala Ile Phe	
	20	25	30
Val Ala Ile	Ile Thr Pro Pro Leu Ile Ile Ala Ser	Ala Leu Lys Leu	
	35	40	45
Asp Val Glu	Lys Thr Gly Phe Leu Val Ser Met	Ser Leu Phe Ala Ser	
	50	55	60
Gly Val Ser	Thr Phe Ile Gln Cys Arg Arg Phe Gly	Pro Ile Gly Ala	
	65	70	75
Lys Leu Leu Cys	Ile Gln Gly Thr Ser Phe Ser Phe Ile Gly	Pro Ile	
	85	90	95
Ile Ala Thr	Gly Leu Val Gly Gly Leu Pro Leu Ile Phe Gly	Val Cys	
	100	105	110
Met Ala Ala	Ala Pro Ile Glu Met Ile Ile Ser Arg Thr Phe Lys Tyr		
	115	120	125
Met Arg Asn	Ile Ile Thr Pro Leu Val Ser Gly Ile Val Val Leu Leu		
	130	135	140
Ile Gly Leu Ser	Leu Ile Lys Val Gly Ile Ile Ser Cys Gly Gly Gly		
	145	150	155
Tyr Thr Ala Met	Asp Asn Gly Thr Phe Ala Ser Trp Glu Asn Leu Ser		
	165	170	175
Ile Ala Gly	Ala Val Leu Leu Ser Val Leu Phe Phe Asn Arg Cys Lys		
	180	185	190
Asn Lys Tyr	Leu Arg Met Ser Ser Ile Val Leu Gly Leu Cys Leu Gly		
	195	200	205
Tyr Gly Leu Ala	Phe Val Leu Gly Lys Val Asp Met Ser Ala Leu Asn		
	210	215	220
Val Glu Met	Leu Met Ser Phe Asn Ile Pro Gln Pro Phe Lys Tyr Gly		
	225	230	235
Leu Asp Phe Asn	Val Ser Ser Phe Ile Ala Ile Gly Leu Val Tyr Met		
	245	250	255
Ile Thr Ala Ile	Glu Ala Thr Gly Asp Val Thr Ala Asn Ser Met Ile		
	260	265	270
Ser Gly Leu Lys	Ile Glu Gly Asp Asp Tyr Leu Lys Arg Val Ser Gly		
	275	280	285
Gly Val Met Ala	Asp Gly Phe Asn Ser Phe Leu Ala Gly Ile Phe Asn		



290                      295                      300  
 Ser Phe Pro Asn Ser Ile Phe Ala Gln Asn Asn Gly Ile Ile Gln Leu  
 305                      310                      315                      320  
 Thr Gly Val Ala Ser Arg Tyr Val Gly Tyr Tyr Ile Ala Ala Met Leu  
                     325                      330                      335  
 Ile Leu Leu Gly Leu Phe Pro Ile Val Gly Ala Val Phe Ser Leu Met  
                     340                      345                      350  
 Pro Asp Pro Val Leu Gly Gly Ala Thr Leu Leu Met Phe Gly Thr Val  
                     355                      360                      365  
 Ala Ala Ala Gly Ile Arg Ile Val Ala Ser Gln Asn Ile Gly Arg Lys  
                     370                      375                      380  
 Glu Thr Leu Val Leu Ala Val Ser Leu Ser Leu Gly Leu Gly Val Glu  
 385                      390                      395                      400  
 Leu Met Pro Asp Val Leu Ser Gln Ala Pro Glu Ala Ile Arg Ser Ile  
                     405                      410                      415  
 Phe Ser Ser Gly Ile Thr Thr Gly Gly Leu Thr Ala Ile Ile Ala Asn  
                     420                      425                      430  
 Ile Val Ile Arg Val Lys Glu Glu Asn Glu Glu  
                     435                      440

<210> 8715

<211> 252

<212> PRT

<213> B.fragilis

<400> 8715

Asn Met Lys Asn Tyr Leu Phe Glu Val Cys Thr Asn Ser Val Glu Ser  
 1                      5                      10                      15  
 Cys Ile Ala Ala Gln Glu Gly Gly Ala Asn Arg Val Glu Leu Cys Ala  
                     20                      25                      30  
 Gly Ile Pro Glu Gly Gly Thr Thr Pro Ser Tyr Gly Glu Ile Ala Met  
                     35                      40                      45  
 Ala Arg Glu Val Leu Thr Thr Thr Arg Leu His Val Ile Ile Arg Pro  
                     50                      55                      60  
 Arg Gly Gly Asp Phe Leu Cys Ser Pro Val Glu Val Lys Thr Met Leu  
 65                      70                      75                      80  
 Lys Asp Ile Glu Met Ala Arg Gln Leu Gly Ala Asp Gly Val Val Phe  
                     85                      90                      95  
 Gly Cys Leu Thr Asn Gly Gly Ile Asp Val Pro Val Met Lys Gln  
                     100                      105                      110  
 Leu Met Glu Ala Ser Lys Gly Leu Ser Val Thr Phe His Arg Ala Phe  
                     115                      120                      125  
 Asp Val Cys Arg Asp Ala Ser Glu Ala Leu Glu Gln Ile Ile Asp Leu  
                     130                      135                      140  
 Gly Cys Asp Arg Ile Leu Thr Ser Gly Gln Gln Ala Thr Ala Glu Leu  
 145                      150                      155                      160  
 Gly Ile Pro Leu Leu Lys Glu Leu Arg Glu Arg Ala Asn Gly Arg Ile  
                     165                      170                      175  
 Thr Leu Leu Ala Gly Cys Gly Val Asn Glu Lys Asn Ile Cys Arg Ile  
                     180                      185                      190  
 Ala Lys Glu Thr Gly Ile Gln Glu Phe His Phe Ser Ala Arg Glu Ser  
                     195                      200                      205  
 Ile Lys Ser Gly Met Glu Tyr Lys Asn Glu Ala Val Ser Met Gly Gly  
                     210                      215                      220  
 Thr Val His Ile Ser Glu Tyr Glu Arg Asn Val Thr Thr Val Lys Arg  
 225                      230                      235                      240  
 Val Lys Asp Thr Ile Glu Ser Ile Thr Ser Ser Leu  
                     245                      250

<210> 8716  
 <211> 291  
 <212> PRT  
 <213> B.fragilis

<400> 8716

Thr Arg Arg Asn Ala Cys Ile Arg His Ala Met Thr Ser Thr Ser Phe  
 1 5 10 15  
 Cys Arg Lys Ser Ser Ala Arg Gln Ala Gly Gly Lys Cys Glu Glu Pro  
 20 25 30  
 Ala Asn Gly Thr Phe Asn Arg Pro Asp Leu Arg Thr Asp Asn Lys Thr  
 35 40 45  
 Ile Met Lys Gln Glu Asn Asp Ile Pro Asp Lys Ile Leu Glu Arg Ile  
 50 55 60  
 Arg Lys Leu Ile Arg Leu Lys Glu Ser Thr Thr Ser Glu Gly Glu Ala  
 65 70 75 80  
 Lys Ala Ala Ala Thr His Val Asn Arg Leu Leu Lys Glu Tyr Asn Leu  
 85 90 95  
 Ser Leu Leu Asp Val Asn Glu Lys Arg Pro Glu Thr Val Phe Glu Ile  
 100 105 110  
 Arg Glu Ser Gly Ala Ile Ser Tyr Lys Asp Ser Phe Gly Asn Tyr Trp  
 115 120 125  
 Lys Arg Asp Leu Leu Arg Val Leu Cys Glu Tyr Asn Tyr Cys Arg Met  
 130 135 140  
 Leu Arg Tyr Arg Gly Thr Thr Asp Met Leu Ile Val Gly Thr Gln Glu  
 145 150 155 160  
 Asn Ile Ala Ala Val Thr Val Leu Tyr Asp Tyr Leu Arg Thr Thr Phe  
 165 170 175  
 Arg Arg Leu Ala Asp Lys Arg His Met Glu Tyr Val Ser Ile Lys Arg  
 180 185 190  
 Gly Tyr Tyr Arg Thr Glu Lys Tyr Arg Lys Lys Tyr Ile Arg Ser Tyr  
 195 200 205  
 Leu Glu Gly Val Thr Pro Gly Leu Arg Asp Gln Phe Glu Ala Met Arg  
 210 215 220  
 Ser Thr Ser Ala Glu Glu Val Arg Glu Thr Ala Leu Val His Cys His  
 225 230 235 240  
 Asn Ala Leu Ile Glu Arg Tyr Leu Glu Thr Ile Gly Thr Cys Ser Ala  
 245 250 255  
 Lys Val Gln Pro Arg Lys Thr Lys Thr Asp Tyr Ser Ala Tyr His Ser  
 260 265 270  
 Gly Met Asp Asp Gly Arg Ser Ile Ser Leu His Arg Gln Ile Asn Gly  
 275 280 285  
 Gly Asn Val  
 290

<210> 8717  
 <211> 200  
 <212> PRT  
 <213> B.fragilis

<400> 8717

Ser Ala Gly Lys Gly Gly Lys Gln Met Ser Ser Lys Glu Asp Ile Leu  
 1 5 10 15  
 Ala Ser Ile Arg Lys Asn Thr Lys Asn Arg Tyr Glu Tyr Pro Asp Trp  
 20 25 30  
 Gln Ile Asn Ala Thr Val Tyr Pro Asp Val Val Ala Lys Phe Cys Glu  
 35 40 45  
 Met Ser Phe Ala Val Gly Gly Glu Ala Ile Val Leu Gly Glu Gly Glu  
 50 55 60

Asp Ile Asn Ala Val Ile Arg Arg Thr Tyr Pro Asp Ala Gly Ser Ile  
 65 70 75 80  
 Ala Ser Asp Leu Glu Glu Ile Thr Cys Ala Thr Phe Asn Pro Asp Leu  
 85 90 95  
 Leu Gly Arg Ala Gln Asp Leu Asn Gly Thr Asp Ile Ala Val Val Lys  
 100 105 110  
 Gly Glu Ile Gly Val Ala Glu Asn Ala Ala Val Trp Ile Pro Gln Thr  
 115 120 125  
 Val Lys Tyr Lys Ala Leu Tyr Phe Ile Ala Glu Lys Leu Val Ile Val  
 130 135 140  
 Leu Asp Lys Asn Arg Ile Val Ser Asn Met His Gln Ala Tyr Glu Arg  
 145 150 155 160  
 Ile Lys Asp Glu Lys Tyr Lys Phe Gly Thr Phe Ile Ser Gly Pro Ser  
 165 170 175  
 Lys Thr Ala Asp Ile Glu Gln Ala Leu Val Met Gly Ala His Gly Ala  
 180 185 190  
 Arg Asp Val Leu Val Ile Leu Lys  
 195 200

&lt;210&gt; 8718

&lt;211&gt; 165

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8718

Met Ala Ile Glu Asn Thr Glu Gly Tyr Pro Leu Ile Ser Trp Arg Glu  
 1 5 10 15  
 Ile Ile Ile Lys Thr Lys Tyr Met Asn Thr Gln Arg Gln Thr Gly Thr  
 20 25 30  
 Cys Arg Ser Leu Ser Gly His Ala Gln Arg His Gly Arg Glu Val Arg  
 35 40 45  
 Pro Ser Tyr Glu Ile Ser Thr Ser Gln Phe Ser Asp Met Lys Val Arg  
 50 55 60  
 Arg Leu Thr Arg Asn Tyr Gly Phe Gly Gly Tyr Ser Ile Tyr Arg Tyr  
 65 70 75 80  
 Leu Val Ser Glu Ala Leu Tyr Lys Gly Glu Tyr Phe Leu Pro Trp Cys  
 85 90 95  
 Glu Glu Thr Ala Arg Ala Val Ala Ser Tyr Trp Asn Ala Ser Leu Glu  
 100 105 110  
 Asp Ile Thr Arg Ile Val Asp Gly Cys Val Gln Val Gly Leu Phe Asn  
 115 120 125  
 Asp Glu Leu Tyr Arg Lys His Arg Val Leu Thr Ser Ala Ala Ile Gln  
 130 135 140  
 Gln Asp Tyr Leu Lys Leu Cys Gly Met Ala Tyr Ile Gln Glu Glu Phe  
 145 150 155 160  
 Ala Leu Ser Ala Ser  
 165

&lt;210&gt; 8719

&lt;211&gt; 505

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8719

Lys Gln Ser Asp Met Ile Asn Lys Lys His Ile Ser Leu Leu Thr Leu  
 1 5 10 15  
 Val Ile Phe Leu Ser Leu Ser His Phe Ala Val Ser Ala Ser Ala Gln  
 20 25 30  
 Pro Ser Val Val Glu Val Pro Ser Val Ser Val Gln Pro Ser Val Asp

35 40 45  
 Ser Leu Ser His Tyr Leu Glu Gln Ala Ala Arg Ser Asn Pro Gln Val  
 50 55 60  
 Asn Ala Asp Phe Met Leu Tyr Lys Ala Ser Leu Glu Lys Ile Pro Gln  
 65 70 75 80  
 Ala Gly Ala Phe Ala Asp Pro Glu Leu Glu Ile Gly Phe Phe Val Lys  
 85 90 95  
 Pro Met Glu Thr Leu Met Gly Lys Gln Ile Ala Asp Phe Thr Leu Met  
 100 105 110  
 Gln Met Phe Pro Trp Phe Gly Thr Arg Lys Ala Ala Arg Ser Glu Ala  
 115 120 125  
 Ser Glu Met Ala Arg Met Ala Tyr Glu Gln Phe Arg Asp Thr Arg Asn  
 130 135 140  
 Asn Leu Trp Tyr Glu Val Lys Ala Gln Trp Tyr Gln Leu Ser Ser Leu  
 145 150 155 160  
 Asn Glu Gln Tyr His Ile Thr Glu Ala Asn Ile Arg Leu Leu Tyr Gln  
 165 170 175  
 Leu Glu Gln Leu Ala Leu Asn Arg Phe Ser Ala Ser Ser Ala Gln Ala  
 180 185 190  
 Ala Pro Ser Ser Thr Ser Val Thr Ser Val Ala Ser Met Pro Pro Ala  
 195 200 205  
 Leu Ser Ser Gly Ser Gly Met Ser Gly Met Gly Gly Met Gly Ser Pro  
 210 215 220  
 Ala Pro Ala Gly Thr Pro Gly Val Ser Ala Gly Ser Ser Ser Gly Arg  
 225 230 235 240  
 Asp Met Ser Gly Met Gly Gly Gly Ser Met Gly Asn Val Val Val Gly  
 245 250 255  
 Gly Met Ser Asp Val Leu Arg Ile Gln Met Glu Arg Ala Gly Leu Glu  
 260 265 270  
 Asp Asn Leu Ala Ser Leu Leu Ser Ala Arg Leu Thr Val Gln Ala Arg  
 275 280 285  
 Phe Asn Ala Leu Leu Asn Arg Pro Ser Asp Ala Ser Val Cys Val Pro  
 290 295 300  
 Asp Ser Leu Thr Gln Arg Phe Tyr Arg Ile Asp Gly Gln Leu Leu Leu  
 305 310 315 320  
 Asp Ser Ile Phe Thr Arg Asn Pro Met Leu Ala Met Leu Glu Ala Glu  
 325 330 335  
 Gly Glu Ala Tyr Arg Ala Lys Ala Lys Met Asp Arg Arg Met Ser Tyr  
 340 345 350  
 Pro Met Ile Gly Ile Gly Leu Gln Tyr Ser Val Val Asn Lys Val Ala  
 355 360 365  
 Asp Pro Met Gly Met Pro Asp Met Asn Gly Lys Asp Met Val Met Pro  
 370 375 380  
 Met Val Lys Val Ser Leu Pro Leu Phe Arg Arg Lys Tyr Asn Ala Arg  
 385 390 395 400  
 Gln Arg Glu Ser His Asn Tyr Arg Met Ala Ser Glu Leu Lys Arg Asp  
 405 410 415  
 Asn Val Gln Asn Gln Leu Gln Ala Glu Tyr Ile Asn Val Arg Gln Gln  
 420 425 430  
 Leu Asp Asp Ala Ala Arg Lys Val Ser Leu Tyr Glu Arg Gln Tyr Ala  
 435 440 445  
 Leu Ser Leu Ser Thr Trp Gln Leu Met Val Arg Glu Phe Thr Ala Gly  
 450 455 460  
 Arg Gln Ser Leu Thr Asp Val Ile Gln Val Glu Arg Gln Met Leu Asp  
 465 470 475 480  
 Tyr Lys Leu Lys Lys Ser Glu Ala Val Ala Ala Tyr Asn Thr Thr Val  
 485 490 495  
 Ala Ala Ile Glu Lys Leu Ile Ala Asp  
 500 505

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

<210> 8720  
 <211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 8720

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Arg Pro Ser Glu Arg Pro Phe Pro Tyr Arg Lys Asp Arg Glu Trp Pro
1          5          10          15
Pro Pro Ser Leu Leu Tyr Leu Gln Thr Tyr Thr Tyr Ile Asn Gln Asn
          20          25          30
Gln Tyr Ser Ser Lys Gln Pro Ala Val Ala Ser Pro Leu Thr Leu Leu
          35          40          45
Arg Tyr Phe Asn Ile Thr Asn Thr Ser Leu Ala Pro
          50          55          60

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<210> 8721  
 <211> 78  
 <212> PRT  
 <213> B.fragilis

<400> 8721

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Arg Ile Thr Glu Ser Glu Ser Asp Ser Leu Arg Phe Val Tyr Arg Ile
1          5          10          15
His Ile Lys Thr Ile Arg Tyr Asp Lys Gln Glu Thr Tyr Ile Phe Thr
          20          25          30
His Leu Gly Asp Ile Pro Phe Ala Glu Ser Phe Cys Arg Phe Gly Phe
          35          40          45
Gly Ala Ala Ile Arg Cys Gly Gly Ala Phe Cys Phe Gly Ala Thr Leu
          50          55          60
Cys Arg Gln Leu Val Pro Leu Ser Gly Thr Gly Gly Thr Gln
          65          70          75

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<210> 8722  
 <211> 128  
 <212> PRT  
 <213> B.fragilis

<400> 8722

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Asn Ser Lys Asp Thr Met Asn Lys Ser Phe Phe Tyr Ala Ile Cys Phe
1          5          10          15
Val Val Ile Leu Val Val Glu Ile Ile Gly Ile Tyr Val Arg Asp
          20          25          30
Ser Phe Val Arg Pro Tyr Met Gly Asp Ala Leu Val Val Val Leu Ile
          35          40          45
Tyr Cys Phe Ile Arg Ile Phe Ile Pro Asn Gly Leu Ser Gln Leu Pro
          50          55          60
Leu Tyr Val Leu Ala Phe Ala Cys Phe Ile Glu Ile Leu Gln Tyr Phe
          65          70          75          80
Gln Leu Val Asp Val Leu Gly Ile Ser Asn Arg Ile Leu Arg Ile Ala
          85          90          95
Leu Gly Ser Thr Phe Asp Leu Lys Asp Met Val Ser Tyr Ala Gly Gly
          100          105          110
Tyr Val Phe Ile Leu Leu Ala Glu Tyr Phe Leu Asp Lys Lys Arg Lys
          115          120          125

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<210> 8723  
 <211> 80  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8723

Asn Asn Arg Glu Arg Asn Lys Tyr Ile Ser Ile Tyr Arg Ile Leu Pro  
 1 5 10 15  
 Leu Asn Ser Ser Asn Lys Leu Ile Gly Phe Tyr Ile Gln Asn Lys Ile  
 20 25 30  
 Ala Asn Val Pro Phe Phe Thr Glu Ala Pro Ile Gln Tyr Pro Arg Val  
 35 40 45  
 Ala Gly Cys Asn Cys Ala Ile Val Asn Cys Leu Cys Ala Cys Pro His  
 50 55 60  
 Asn Ser Lys Arg Val Phe Arg Asn Ile Leu Tyr Tyr Ile Ile Ala Ile  
 65 70 75 80

&lt;210&gt; 8724

&lt;211&gt; 373

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8724

Gln Ile Arg Asp Gly Tyr Asp Arg Thr Ile Val Glu Phe Leu Arg Leu  
 1 5 10 15  
 Asn Phe His Pro Val Ala Ile Arg Glu Gly Tyr Leu Leu Ile Asn Asp  
 20 25 30  
 Tyr Leu Cys Gly Ser Leu Leu Asp Phe Met Met Asp Lys Thr Lys Lys  
 35 40 45  
 Val Arg Tyr Val Phe Ser Val Phe Met Val Met Leu Met Val Gly Ile  
 50 55 60  
 Ala Glu Trp Thr Gly Glu Lys Glu Ile Ile Phe Pro Glu Met Ala Ala  
 65 70 75 80  
 Leu Ala Val Gly Leu Trp Val Ile Asp Lys Arg Val Trp Lys Val Gly  
 85 90 95  
 Arg Trp Gln Leu Ile Gly Leu Met Thr Ala Gly Ala Val Ala Gly Val  
 100 105 110  
 Cys Ile Val Arg Tyr Ser Thr Leu Pro Leu Leu Cys Asn Leu Cys Leu  
 115 120 125  
 Ala Phe Ala Phe Ala Ala Cys Cys Leu Leu Phe Ser Arg Ala Thr Leu  
 130 135 140  
 Ile Pro Leu Ile Ser Ala Cys Met Leu Pro Val Leu Leu His Thr Glu  
 145 150 155 160  
 Thr Trp Ile Tyr Pro Ser Ala Val Phe Leu Leu Ser Ala Val Leu Val  
 165 170 175  
 Ala Gly Gln Arg Leu Met Glu Lys Gly Gly Leu Arg Arg Glu Thr Asp  
 180 185 190  
 Tyr Val Leu Pro Gly Arg Glu Trp Lys Lys Glu Ile Phe Arg Trp Ala  
 195 200 205  
 Ala Leu Leu Phe Trp Val Ser Leu Val Ala Ala Leu Ser Ile Ser Cys  
 210 215 220  
 Gly Cys Ser Tyr Phe Ile Ile Pro Pro Leu Ile Val Thr Phe Thr Glu  
 225 230 235 240  
 Ile Val Asn Ser Lys Ala Gly Phe Arg Asn Arg Pro Met Gln Val Phe  
 245 250 255  
 Leu Phe Leu Val Thr Gly Ala Ala Leu Gly Thr Ala Phe Gln Ile Ile  
 260 265 270  
 Gly His Thr Phe Leu His Leu Pro Glu Thr Val Val Ala Leu Leu Ile  
 275 280 285  
 Ile Cys Cys Leu Phe Ala Val Phe Glu Trp Thr Gly Lys Tyr Phe Ala  
 290 295 300  
 Pro Ala Gly Ala Leu Ala Leu Ile Pro Leu Ile Val Pro Gln Glu Gly

305 310 315 320  
 Val His Trp Leu Pro Leu Gln Ala Ala Ala Gly Ala Ala Leu Phe Ile  
 325 330 335  
 Ala Ile Gly Met Leu Val Phe Gln Gln Cys Tyr Lys Trp Ser Lys Ala  
 340 345 350  
 Gln Leu Ile Phe Cys Phe Thr Pro Thr Leu Leu Arg Arg Tyr Leu Asn  
 355 360 365  
 Arg Arg Arg Lys Glu  
 370

<210> 8725  
 <211> 138  
 <212> PRT  
 <213> B.fragilis

<400> 8725  
 Glu Ser Gly Glu Val Lys Glu Val Pro Arg Ile Thr Ile Phe Thr Ile  
 1 5 10 15  
 Asn Asp Tyr Phe Pro Pro Lys Ser Phe Cys Asn Ile Arg Val Asn Arg  
 20 25 30  
 Ile Phe Val Tyr Asn Phe Gly Val Val Met Thr Glu Glu Glu Lys Lys  
 35 40 45  
 Leu Leu Ser Thr Phe Glu Ala Arg Leu Arg His Leu Ile Tyr Leu His  
 50 55 60  
 Asp Glu Leu Lys Arg Glu Asn Ala Glu Leu Lys Gln Leu Leu Glu Glu  
 65 70 75 80  
 Glu Lys Ser Glu Leu Glu Lys Ala Arg Ala Glu Tyr Lys Ala Leu Glu  
 85 90 95  
 Ser Ser Tyr Thr Asp Leu Lys Thr Ala Thr Thr Ile Ser Leu Asn Gly  
 100 105 110  
 Ser Asp Val Lys Glu Thr Lys Leu Arg Leu Ser Lys Leu Val Arg Glu  
 115 120 125  
 Val Asp Lys Cys Ile Ala Leu Leu Asn Glu  
 130 135

<210> 8726  
 <211> 390  
 <212> PRT  
 <213> B.fragilis

<400> 8726  
 Gly Met Lys Leu Ser Asp Tyr Ile Arg Gly Phe Arg Lys Gly Lys Glu  
 1 5 10 15  
 Ala His Arg Leu Glu Lys Glu Ala Met Arg Asp Pro Phe Leu Ala Asp  
 20 25 30  
 Ala Leu Glu Gly Tyr Ser Arg Val Glu Ser Gly Ala Asp Glu Gln Ile  
 35 40 45  
 Glu Leu Leu Arg Arg Arg Val Asn Met Arg Val Thr Gln Lys Arg Arg  
 50 55 60  
 His Thr Ile Ala Trp Ser Val Ala Ala Ser Leu Leu Ile Gly Val Cys  
 65 70 75 80  
 Ile Gly Ser Tyr Phe Leu Leu Gln Glu Asn Thr Leu Pro Asp Glu Ala  
 85 90 95  
 Arg Ile Ala Met Glu Glu Val Ser His Leu Glu Pro Leu Ser Val Gln  
 100 105 110  
 Lys Glu Glu Lys Lys Glu Asp Leu Val Ala Thr Val Arg Lys Asp Ser  
 115 120 125  
 Ala Thr Ile Gln Lys Gly Leu Ile Thr Gly Asn Arg Glu Lys Lys Val  
 130 135 140

Val Val Ser Pro His Thr Glu Val Pro Gln Ala Met Thr Gln Glu Trp  
 145 150 155 160  
 Ile Asp Glu Ala Leu Glu Thr Thr Ile Ala Glu Glu Pro Leu Ala Ala  
 165 170 175  
 Thr Thr Ser Ser Ala Met Lys Ser Ile Pro Ala Asn Asp Ser Ser Leu  
 180 185 190  
 Thr Ala Gln Val Ala Val Gly Gly Lys Val His Gly Arg Val Thr Asp  
 195 200 205  
 Ser Ser Gly Tyr Pro Ile Val Gly Ala Thr Val Lys Leu Lys Gly Thr  
 210 215 220  
 Asn Gln Gly Thr Ile Ser Asp Val Asn Gly Asn Phe Val Leu Lys Thr  
 225 230 235 240  
 Gly Gly Asn Arg Glu Leu Ala Val Asp Tyr Ile Gly Tyr Glu Ser Val  
 245 250 255  
 Thr Leu Pro Ala Asp Thr Thr Lys Ser Leu Leu Ile Ala Met Asn Glu  
 260 265 270  
 Asp Gln Ala Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Ser Gln  
 275 280 285  
 Ser Lys Gly Ser Ile Thr Gly Ala Val Ala Ser Leu Lys Met Ser Gly  
 290 295 300  
 Thr Pro Gln Pro Thr Ile Gly Arg Lys Ala Phe Arg Lys Tyr Leu Lys  
 305 310 315 320  
 Glu Ser Leu Val His Pro Ser Asp Lys Asp Cys Ala Arg Ala Lys Gly  
 325 330 335  
 Lys Val Ile Leu Thr Phe Arg Val Asp Lys Glu Gly Arg Pro Gln Asp  
 340 345 350  
 Ile Thr Val Lys Lys Gly Leu Cys Ala Ser Ala Asp Glu Glu Ala Ile  
 355 360 365  
 Arg Leu Ile Glu Glu Gly Pro Asp Trp Thr Met Gly Glu Glu Pro Val  
 370 375 380  
 Glu Ile Ser Ile Arg Phe  
 385 390

<210> 8727

<211> 311

<212> PRT

<213> B.fragilis

<400> 8727

Thr Phe Pro Cys Phe Ala Ala Glu Ile Lys Phe Ser Met Ala Lys Gln  
 1 5 10 15  
 Gln Phe Asn Lys Leu Ile Trp Leu Val Asp Thr Ile Phe Arg Asn Ala  
 20 25 30  
 Pro Val Thr Phe Ala Glu Ile Asn Arg Arg Trp Arg Ala Gly Asp Asp  
 35 40 45  
 Asn Arg Ser Asp Ile Pro Leu Arg Thr Phe His Asn His Arg Gln Ala  
 50 55 60  
 Ile Glu Glu Met Phe Asp Ile Asn Ile Glu Cys Asp Lys Arg Asn Asn  
 65 70 75 80  
 Thr Tyr Tyr Ile Ala Asp Ala Glu Gly Met Leu Gly Asp Lys Leu Lys  
 85 90 95  
 Met Trp Leu Leu Asn Ser Phe Ser Leu Asn Asn Val Leu Gln Glu Asn  
 100 105 110  
 Val Asp Met Lys Asn Arg Ile Val Phe Glu Glu Val Pro Ser Gly Val  
 115 120 125  
 Gln Phe Met Asp Leu Val Ile Asp Ala Met Arg Ser Gly Arg Val Leu  
 130 135 140  
 Ala Met Glu Tyr Gln Ala Tyr Asn Trp Glu His Ser Lys Asp Val Leu  
 145 150 155 160



Leu Glu Pro Tyr Phe Val Lys Leu Phe Arg His Arg Trp Tyr Leu Ile  
 165 170 175  
 Gly Ile Asn Arg Glu Tyr Lys Ala Phe Arg Ser Tyr Ser Leu Asp Arg  
 180 185 190  
 Ile Lys Arg Ile Ala Leu Ser Glu Glu Thr Phe Asn Phe Pro Arg Lys  
 195 200 205  
 Phe Thr Pro Gln Asp His Phe Arg Asp Ser Phe Gly Ile Ile Arg Asp  
 210 215 220  
 Glu Asn Leu Leu Pro Gln His Thr Val Leu Arg Thr Thr Ile Ser Gln  
 225 230 235 240  
 Ala Pro Tyr Leu Arg Asn Leu Pro Leu His Ser Ser Gln Lys Glu Ile  
 245 250 255  
 Ala Val Thr Glu Ser Tyr Val Asp Phe Glu Leu Tyr Ile Ser His Thr  
 260 265 270  
 Tyr Asp Phe Ile Gln Glu Leu Leu Ser Lys Gly Ala Ala Val Glu Val  
 275 280 285  
 Leu Lys Pro Gln Ser Leu Arg Asp Lys Ile Lys Ala Glu Ile Gln Asn  
 290 295 300  
 Met Gln Thr Leu Tyr Arg Leu  
 305 310

<210> 8728

<211> 552

<212> PRT

<213> B.fragilis

<400> 8728

Asn Ser Asn Cys Met Lys Lys Ile Ser Asp Ile Leu Arg Lys Lys Gln  
 1 5 10 15  
 Val Leu Tyr Pro Leu Ile Ala Leu Ala Gly Phe Val Leu Gly Trp Leu  
 20 25 30  
 Leu Phe Ser Pro Ser Ser Ser Pro Glu Ser Ala Gly Gly Thr His Ala  
 35 40 45  
 Glu Ala His Asn His Asp Met His Gly Thr Ser His Asp Leu Val Gln  
 50 55 60  
 Asp Glu Ser Gly Val Trp Thr Cys Ser Met His Pro Gln Ile Arg Gln  
 65 70 75 80  
 Asp Lys Pro Gly Lys Cys Pro Ile Cys Gly Met Asp Leu Ile Pro Leu  
 85 90 95  
 Lys Lys Asn Val Ile Ser Gly Gly Asp Ala Val Ser Asp Pro Asp Ala  
 100 105 110  
 Ile Arg Leu Ser Asp Glu Ala Met Ala Leu Ala Asp Val Gln Thr Thr  
 115 120 125  
 Arg Val Ser Arg Ser Asn Pro Val Lys Gln Val Arg Leu Tyr Gly Lys  
 130 135 140  
 Ile Ile Pro Asp Glu Arg Ser Leu Gln Ser Gln Thr Ala Tyr Val Gly  
 145 150 155 160  
 Gly Arg Ile Glu Arg Leu Asp Ile Glu Phe Thr Gly Glu Thr Val Arg  
 165 170 175  
 Ala Gly Gln Thr Leu Ala Thr Leu Tyr Ser Pro Glu Leu Phe Thr Ala  
 180 185 190  
 Gln Gln Glu Leu Leu Glu Ala Val Arg Met Gln Gln Pro Ala Leu Val  
 195 200 205  
 Gln Ala Ala Arg Glu Lys Leu Arg Leu Trp Asn Leu Thr Asp Ala Gln  
 210 215 220  
 Ile Asp Ala Ile Gln Tyr Ser Gly Gln Ala Ser Pro Met Val Glu Ile  
 225 230 235 240  
 Lys Ser Asn Thr Asn Gly Ile Val Ile Ala Lys Arg Val Asn Arg Gly  
 245 250 255

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Asp Tyr Val Ser Gln Gly Ser Ile Leu Phe Asp Ile Ala Asn Leu Ser  
 260 265 270  
 Arg Val Trp Ala Met Phe Asp Ala Phe Glu Val Asp Leu Pro Phe Leu  
 275 280 285  
 Ala Lys Gly Asp Arg Val Glu Phe Thr Leu Ser Ala Phe Pro Gly Lys  
 290 295 300  
 Thr Tyr Ser Gly Arg Ile Ser Phe Ile Asp Pro Ile Leu Asn Ala Thr  
 305 310 315 320  
 Thr Arg Thr Ala Arg Val Arg Val Asp Val Ala Asn Pro Thr Leu Glu  
 325 330 335  
 Met Lys Pro Glu Met Tyr Ala Thr Ala Gln Val Ala Ala Pro Leu Lys  
 340 345 350  
 Gly Tyr Lys Asp Arg Ile Val Val Pro Gln Thr Ala Val Leu Trp Thr  
 355 360 365  
 Gly Lys Arg Ala Val Val Tyr Val Arg Leu Pro Asp Thr Asp Thr Pro  
 370 375 380  
 Thr Phe Arg Met Arg Glu Val Thr Leu Gly Pro Ala Leu Gly Gly Ala  
 385 390 395 400  
 Tyr Val Val Leu Asp Gly Leu Ser Asp Gly Glu Glu Ile Val Thr Asn  
 405 410 415  
 Gly Val Phe Ser Ile Asp Ala Ser Ala Gln Leu Glu Gly Lys Arg Ser  
 420 425 430  
 Met Met Asn Glu Asp Thr Pro Gly Thr Ala Pro Met Thr Gly His Gln  
 435 440 445  
 Gly His Ser Met Ser Gly Met Ser Gly Ser His Ala Val Ser Gln Glu  
 450 455 460  
 Ser Glu His Val Leu Phe Ala Val Arg Gly Ser Cys Asp Met Cys Lys  
 465 470 475 480  
 Glu Arg Ile Glu Thr Ala Ala Lys Gly Val Ser Gly Val Arg Ser Ala  
 485 490 495  
 His Trp Asp Arg Glu Lys Gln Met Ile His Leu Gln Leu Asp Pro Ser  
 500 505 510  
 Glu Thr Ser Ala Asp Ala Val Ala Lys Ala Ile Ala Ala Ala Gly His  
 515 520 525  
 Asp Thr Asp Lys Tyr Lys Ala Val Lys Ala Val Tyr Asp Ala Leu Pro  
 530 535 540  
 Gly Cys Cys Lys Tyr Arg Asp Glu  
 545 550

&lt;210&gt; 8729

&lt;211&gt; 394

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8729

Asn Met Lys Cys Asn Val Ser Tyr Lys Tyr Leu Phe Ile Ala Ile Gly  
 1 5 10 15  
 Ile Leu Cys Pro Leu Phe Ser Ala Cys Asp Tyr Ala Asp Gly Glu Gly  
 20 25 30  
 Ser Gly Ser Glu Asn Ala Val Tyr Met Glu Thr Pro Asp Asn Lys Gly  
 35 40 45  
 Ile Val Asn Phe Thr Leu Glu Pro Asp Gly Gly Ile Thr Tyr Leu Thr  
 50 55 60  
 Pro Arg Leu Ala Asn Ile Ser Gln Asn Pro Val Thr Ile Gln Val Gly  
 65 70 75 80  
 Tyr Asp Lys Glu Ala Leu Asp Lys Tyr Asn Lys Asp Asn Gly Ala Ser  
 85 90 95  
 Tyr Glu Pro Leu Pro Pro Ser Ala Phe Lys Leu Ala Asp Ala Glu Gly  
 100 105 110

Asn Glu Leu Ser Ala Ser Glu Gly Ile Arg Val Pro Ala Gly Asp Phe  
 115 120 125  
 Ser Ala Lys Ile Met Val Lys Val Gly Gln Leu Asn Ser Lys Asp Phe  
 130 135 140  
 Pro Ala Asn Lys Lys Tyr Ala Ile Pro Leu Ser Ile Thr Gly Ala Ser  
 145 150 155 160  
 Asn Tyr Ser Leu Ile Pro Ser Gln Arg Ser Ala Ile Leu Leu Leu Asn  
 165 170 175  
 Arg Ser Ile Leu Ser Ser Val Ala Lys Val Ser Gly Gly Glu Gly Ile  
 180 185 190  
 Arg Ile Lys Pro Val Gly Met His Thr Lys Ala Glu Trp Thr Ile Gln  
 195 200 205  
 Met Ser Ala Ile Tyr Ser Ser Leu Thr Arg Ser Asn Leu Thr Thr Ala  
 210 215 220  
 Tyr Leu Ser Asn Gly Thr Gly Gly Ala Phe Tyr Thr Arg Ile Ser Ser  
 225 230 235 240  
 Thr Ala Gly Ile Gln Val Lys Asn Gly Arg Asp Gly Asp Asp Thr Trp  
 245 250 255  
 Thr Gln Ile Pro Leu Gln Ala Gly Lys Trp Leu His Ile Thr Tyr Val  
 260 265 270  
 His Lys Asp Lys Lys Thr Thr Val Tyr Val Asn Gly Lys Val Gln Lys  
 275 280 285  
 Val Phe Glu Asn Ser Ala Ile Thr Phe Gly Glu Asn Ser Met Ile Val  
 290 295 300  
 Val Gly Asn Ser Gly Tyr Arg Asn Asp Tyr Leu Arg Glu Ile Arg Leu  
 305 310 315 320  
 Trp Asp Lys Ala Leu Thr Glu Ser Glu Ile Asn Asp Tyr Leu Tyr Leu  
 325 330 335  
 Pro Met Asp Pro Ala Thr Pro His Leu Ile Ser Tyr Leu Pro Leu Ser  
 340 345 350  
 Lys Glu Met Glu Thr Lys Asp Leu Lys Ala Pro Ala Gly Thr Glu Asn  
 355 360 365  
 Val Thr Thr Lys Ala Arg Ile Glu Tyr Val Glu Asn Val Lys Phe Pro  
 370 375 380  
 Ala Asp Glu Leu Val Ile Val Asn Gln Glu  
 385 390

&lt;210&gt; 8730

&lt;211&gt; 511

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8730

Lys Glu Arg Cys Asn Phe Ala Cys Gln Lys Ile Thr Tyr Leu Met Ala  
 1 5 10 15  
 Val Tyr Val Glu Glu Val Ser Arg Thr Phe Gly Glu Tyr Leu Leu Ile  
 20 25 30  
 Pro Gly Leu Thr Thr Lys Gln Cys Val Pro Ser Asn Val Ser Leu Arg  
 35 40 45  
 Thr Pro Leu Val Lys His Ala Ala Gly Thr Gln Ala Ala Ile Glu Leu  
 50 55 60  
 Asn Ile Pro Phe Val Ser Ala Ile Met Gln Ser Val Ser Gly Pro Glu  
 65 70 75 80  
 Leu Ala Ile Glu Leu Ala Arg Asn Gly Gly Leu Ser Phe Ile Phe Gly  
 85 90 95  
 Ser Gln Pro Ile Ala Ser Gln Ala Glu Met Val Arg Lys Val Lys Lys  
 100 105 110  
 Phe Lys Ala Gly Phe Val Thr Ser Asp Ser Asn Leu Thr Pro Glu His  
 115 120 125

Thr Leu Glu Asp Val Leu Arg Leu Leu Arg Gln Thr Gly His Ser Thr  
 130 135 140  
 Ile Gly Ile Thr Asp Asp Gly Ser Pro Asn Gly His Leu Leu Gly Leu  
 145 150 155 160  
 Val Thr Ser Arg Asp Tyr Arg Ile Ser Arg Asp Pro Leu Asp Lys Lys  
 165 170 175  
 Ile Lys Asp Phe Met Thr Pro Phe Glu Lys Leu Ile Val Gly Glu Val  
 180 185 190  
 Gly Leu Thr Leu Ser Glu Ala Asn Gln Ile Ile Trp Asp His Lys Leu  
 195 200 205  
 Asn Thr Leu Pro Ile Ile Asp Lys Glu Gly Arg Leu Ala Tyr Phe Val  
 210 215 220  
 Phe Arg Lys Asp Tyr Asp Ser His Lys Glu Asn Pro Asn Glu Val Ser  
 225 230 235 240  
 Ser Pro Asp Lys Lys Leu Leu Val Gly Ala Gly Ile Asn Thr Arg Asp  
 245 250 255  
 Tyr Gln Glu Arg Val Pro Ala Leu Val Glu Ala Gly Val Asp Val Leu  
 260 265 270  
 Cys Ile Asp Ser Ser Asp Gly Tyr Ser Glu Trp Gln Tyr Glu Thr Leu  
 275 280 285  
 Gln Trp Ile Lys Gln Gln Tyr Gly Asp Lys Val Leu Val Gly Ala Gly  
 290 295 300  
 Asn Val Val Asp Lys Glu Gly Phe Leu Tyr Leu Ala Glu Ala Gly Ala  
 305 310 315 320  
 Asp Phe Val Lys Val Gly Ile Gly Gly Gly Ser Ile Cys Ile Thr Arg  
 325 330 335  
 Glu Gln Lys Gly Ile Gly Arg Gly Gln Ala Thr Ala Leu Gln Asp Val  
 340 345 350  
 Ala Arg Ala Arg Asp Glu Tyr Gln Ala Arg Thr Gly Ile Tyr Val Pro  
 355 360 365  
 Ile Cys Ser Asp Gly Gly Leu Val His Asp Tyr His Met Val Leu Ala  
 370 375 380  
 Leu Ala Met Gly Ala Asp Phe Leu Met Met Gly Arg Tyr Phe Ala Arg  
 385 390 395 400  
 Phe Asp Glu Ser Pro Thr Lys Lys Leu Cys Ile Lys Asn Asn Tyr Val  
 405 410 415  
 Lys Glu Tyr Trp Gly Glu Gly Ser Asn Arg Ala Gln Asn Trp Gln Arg  
 420 425 430  
 Tyr Asp Met Gly Gly Thr Glu Ser Leu Lys Phe Glu Glu Gly Val Asp  
 435 440 445  
 Ser Tyr Val Pro Tyr Ala Gly Lys Met Lys Asp Asn Leu Ala Ala Thr  
 450 455 460  
 Leu Ser Lys Ile Lys Ala Thr Met Cys Ser Cys Gly Ala Val Thr Ile  
 465 470 475 480  
 Pro Asp Leu Gln Gln Asn Ala Lys Ile Thr Leu Val Ser Ser Thr Ser  
 485 490 495  
 Ile Val Glu Gly Gly Ala His Asp Val Ile Leu Lys Glu Lys Gly  
 500 505 510

&lt;210&gt; 8731

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8731

Ala Asp Leu Cys Tyr Leu Cys Gly Arg Thr Lys Ile Asn Arg Ala Met  
 1 5 10 15  
 Phe Val Leu Ile Leu Thr Tyr Lys Ala Pro Ile Glu Lys Val Ile Glu  
 20 25 30

[illegible]

<400> 8732

Asp 1	Lys	Ser	Arg	Asp 5	Thr	Lys	His	Ala	Asn 10	Ser	Leu	Pro	Leu	Met 15	Asn
Ala	Asn	Val	Leu	Glu 20	Lys	Leu	Lys	Ile 25	Leu	Ala	Glu	Ser	Ala	Lys 30	Tyr
Asp	Val	Ser	Cys	Ala 35	Ser	Ser	Gly 40	Thr	Val	Arg	Ala	Asn 45	Lys	Pro	Gly
Thr	Leu 50	Gly	Asn	Thr	Val	Gly 55	Gly	Trp	Gly	Ile	Cys 60	His	Ser	Phe	Ala
Glu 65	Asp	Gly	Arg	Cys	Ile 70	Ser	Leu	Leu	Lys	Val 75	Met	Leu	Thr	Asn	Tyr 80
Cys	Ile	Tyr	Asp	Cys 85	Ala	Tyr	Cys	Ile	Asn 90	Arg	Arg	Ser	Asn	Asp 95	Leu
Pro	Arg	Ala	Thr	Leu 100	Ser	Val	Ser	Glu	Leu 105	Val	Asp	Leu	Thr	Ile 110	Glu
Phe	Tyr	Arg	Arg	Asn 115	Tyr	Ile	Glu	Gly 120	Leu	Phe	Leu	Ser	Ser	Gly 125	Val
Val	Arg 130	Asn	Pro	Asp	Tyr	Thr 135	Met	Glu	Arg	Leu	Val 140	Arg	Val	Ala	Lys
Asp 145	Leu	Arg	Glu	Val	His 150	Arg	Phe	Asn	Gly	Tyr 155	Ile	His	Leu	Lys	Ser 160
Ile	Pro	Gly	Ala	Ser 165	Arg	Glu	Leu	Val	Asn 170	Glu	Ala	Gly	Arg	Tyr 175	Ala
Asp	Arg	Leu	Ser	Val 180	Asn	Val	Glu	Ile 185	Pro	Lys	Glu	Glu	Asn	Leu 190	Lys
Leu	Leu 195	Ala	Pro	Glu	Lys	Asp	His 200	Lys	Ser	Val	Phe	Ala 205	Pro	Met	Leu
Tyr	Ile 210	Gln	Gln	Gly	Val	Leu 215	Glu	Ser	Ser	Glu	Glu 220	Arg	Lys	Lys	Phe
Arg 225	Tyr	Ala	Pro	Arg	Phe 230	Ala	Pro	Ala	Gly	Gln 235	Ser	Thr	Gln	Met	Ile 240
Val	Gly	Ala	Thr	Ala 245	Glu	Ser	Asp	Lys	Asp 250	Ile	Leu	Phe	Leu	Ser	Ser 255
Ala	Leu	Tyr	Gln	Arg 260	Pro	Thr	Met	Lys 265	Arg	Val	Tyr	Tyr	Ser	Gly 270	Tyr
Val	Ser 275	Val	Asn	Thr	Tyr	Asp	Thr 280	Arg	Leu	Pro	Ala	Leu	Lys	Gln	Pro
Pro	Leu 290	Val	Arg	Glu	Asn	Arg 295	Leu	Tyr	Gln	Ala	Asp 300	Trp	Leu	Met	Arg
Phe 305	Tyr	Gln	Phe	Lys	Val 310	Asn	Glu	Ile	Val	Asp 315	Asp	Thr	Tyr	Pro	Asp 320
Leu	Asp	Leu	Glu	Ile 325	Asp	Pro	Lys	Leu	Ser 330	Trp	Ala	Leu	Arg	His	Pro

Glu Gln Phe Pro Val Asp Ile Asn Lys Ala Asp Tyr Glu Met Ile Leu  
 340 345 350  
 Arg Ile Pro Gly Ile Gly Val Lys Ser Ala Lys Leu Ile Ile Ala Ser  
 355 360 365  
 Arg Arg Tyr Ser Lys Leu Gly Tyr Tyr Gln Leu Lys Lys Ile Gly Val  
 370 375 380  
 Val Met Lys Lys Ala Gln Tyr Phe Ile Thr Cys Ser Glu Leu Pro Met  
 385 390 395 400  
 Arg Thr Val Asn Glu Met Thr Pro Gln Thr Val Arg Ser Leu Leu Leu  
 405 410 415  
 Pro Lys Ser Ala Lys Lys Lys Thr Asp Glu Asn Gln Leu Ser Phe Val  
 420 425 430  
 Phe Asn Asp  
 435

<210> 8733

<211> 82

<212> PRT

<213> B.fragilis

<400> 8733

Phe Pro Ser Arg Val His His Phe Thr Asp Leu Arg Pro Val Leu Pro  
 1 5 10 15  
 Thr Ser Pro Glu Tyr Val Ser Pro Phe Ser Ser Arg Arg Tyr Ser Ala  
 20 25 30  
 Asn Arg Ser Val Thr Lys Asn Asn Ile Asn Arg Arg Phe Lys Gln Met  
 35 40 45  
 Pro Tyr Gln Phe Ala Ile Lys Glu Val Ala Gly Ile Thr Lys Ile Lys  
 50 55 60  
 Thr Ile Val Ser Ile Phe His Lys Thr Lys Lys Arg Ser Leu Phe Phe  
 65 70 75 80  
 Ile Tyr

<210> 8734

<211> 246

<212> PRT

<213> B.fragilis

<400> 8734

Leu Leu Leu Arg Leu Asn Lys Lys Thr Phe Asn Met Arg Arg Thr Ala  
 1 5 10 15  
 Ile Ala Leu Phe Cys Leu Phe Leu Leu Ser Val Gly Ile Gly Leu Arg  
 20 25 30  
 Ala Gln Asn Ile Gln Leu His Tyr Asp Phe Gly Arg Ser Leu Tyr Asp  
 35 40 45  
 Lys Asp Leu Lys Asp Arg Pro Val Leu Thr Ser Thr Val Glu Lys Phe  
 50 55 60  
 His Pro Asp Lys Trp Gly Ser Thr Tyr Phe Phe Val Asp Met Asp Tyr  
 65 70 75 80  
 Thr Ser Asp Gly Val Ala Ala Ala Tyr Trp Glu Ile Ala Arg Glu Leu  
 85 90 95  
 Lys Phe Trp Lys Asn Pro Phe Ser Val His Val Glu Tyr Asn Gly Gly  
 100 105 110  
 Leu Ala Lys Gly Phe Ser Tyr Gln Asn Ala Tyr Leu Gly Gly Val Thr  
 115 120 125  
 Tyr Thr Tyr Asn Asn Thr Ala Phe Ser Arg Gly Phe Ser Leu Ser Ala  
 130 135 140  
 Met Tyr Lys Tyr Ile Gln Lys His His Ser Pro Asn Asn Phe Gln Leu

145 150 155 160  
 Thr Gly Thr Trp Tyr Met Asn Phe Ser Asn Asn Leu Leu Thr Phe Ser  
 165 170 175  
 Gly Phe Ala Asp Trp Trp Arg Glu Glu Thr Ala Tyr Gly Lys Thr Ile  
 180 185 190  
 Phe Leu Thr Glu Pro Gln Phe Trp Val Asn Leu Asn Arg Ile Lys Gly  
 195 200 205  
 Ile Ser Asp Lys Phe Lys Leu Ser Val Gly Ser Glu Val Glu Leu Ser  
 210 215 220  
 Asn Asn Phe Gly Gly Arg Asp Gly Phe Tyr Val Ile Pro Thr Leu Ala  
 225 230 235 240  
 Leu Lys Trp Thr Ile Asn  
 245

<210> 8735  
 <211> 703  
 <212> PRT  
 <213> B.fragilis

<400> 8735

Lys Gln Ser Arg Met Lys Gln Lys Lys Met Leu Ser Leu Thr Leu Ser  
 1 5 10 15  
 Gln Ile Arg Gln Leu Tyr Cys Gln Glu Leu Pro Glu Leu Thr Ala Met  
 20 25 30  
 Ala Gln Gln Ser Leu Asp Asp Thr Asp Phe Lys Asn His Leu Gln Glu  
 35 40 45  
 Phe Leu Thr Pro Tyr Ile Ser Gly Gly Asn Lys Ala Gly Glu Gln Ile  
 50 55 60  
 Arg Leu Leu Ile Ser Tyr Asp Gly Lys Thr Val His Glu Leu Ser Asn  
 65 70 75 80  
 Glu Gln Asp Met Gln Ile Gln Thr Leu Ser Leu Leu Arg Arg Phe Leu  
 85 90 95  
 Thr Gly Asn Leu Glu Asn Ala Glu Ile Pro Thr Asp Leu Phe Leu Asp  
 100 105 110  
 Leu Tyr Tyr Leu Phe Lys Arg Leu Glu Glu Pro Glu Ser Pro Leu Pro  
 115 120 125  
 Ser Pro Gln Arg Ile Lys Asn Arg Thr Glu Arg Trp Ala Thr Gly Leu  
 130 135 140  
 Asp Glu Asp Val Ile Glu Leu Arg Ser Glu Asn Gln Glu Arg Met Leu  
 145 150 155 160  
 His Leu Leu Ile Gln Lys Ile Glu Asn Arg Lys Ser Lys Pro Ser Ser  
 165 170 175  
 Arg Phe His Phe Glu Glu Gly Met Ser Tyr Glu Glu Lys Tyr Gln Gln  
 180 185 190  
 Val Cys Gln Trp Trp Asn Asp Phe Arg Phe His Leu Ser Met Ala Ile  
 195 200 205  
 Lys Thr Pro Thr Glu Leu Asn Arg Phe Leu Gly Asn Ser Leu Ser Ser  
 210 215 220  
 Glu Thr Met Tyr Leu Leu Ser Arg Ala Arg Lys Lys Gly Met Pro Phe  
 225 230 235 240  
 Phe Ala Thr Pro Tyr Tyr Leu Ser Leu Leu Asn Thr Ser Gly Glu Gly  
 245 250 255  
 Tyr Asn Asp Glu Ala Ile Arg Ser Tyr Ile Leu Tyr Ser Pro Arg Leu  
 260 265 270  
 Val Glu Thr Tyr Gly Asn Ile Arg Ala Trp Glu Arg Glu Asp Ile Val  
 275 280 285  
 Glu Val Gly Lys Pro Asn Ala Gly Trp Leu Leu Pro Asp Gly His  
 290 295 300  
 Asn Ile His Arg Arg Tyr Pro Glu Val Ala Ile Leu Ile Pro Asp Thr

305 310 315 320  
 Met Gly Arg Ala Cys Gly Gly Leu Cys Ala Ser Cys Gln Arg Met Tyr  
 325 330 335  
 Asp Phe Gln Ser Glu Arg Leu Asn Phe Glu Phe Asp Ala Leu Arg Pro  
 340 345 350  
 Lys Glu Ser Trp Asp Lys Lys Leu Arg Arg Leu Met Ser Tyr Phe Glu  
 355 360 365  
 Glu Asp Thr Gln Leu Arg Asp Ile Leu Ile Thr Gly Gly Asp Ala Leu  
 370 375 380  
 Met Ser Gln Asn Lys Thr Leu Lys Asn Ile Leu Glu Ala Val Tyr Arg  
 385 390 395 400  
 Met Ala Ala Arg Lys Arg Lys Ala Asn Gln Glu Arg Pro Glu Gly Glu  
 405 410 415  
 Lys Tyr Ala Glu Leu Gln Arg Val Arg Leu Gly Ser Arg Leu Leu Ala  
 420 425 430  
 Tyr Leu Pro Met Arg Ile Asn Asp Glu Leu Ile Glu Ile Leu Arg Glu  
 435 440 445  
 Phe Lys Glu Lys Ala Ser Val Ile Gly Val Lys Gln Phe Ile Ile Gln  
 450 455 460  
 Thr His Leu Gln Ser Pro Leu Glu Val Thr Pro Tyr Thr Arg Glu Ala  
 465 470 475 480  
 Ile Arg Lys Ile Leu Ser Ala Gly Trp Leu Ile Thr Asn Gln Leu Val  
 485 490 495  
 Tyr Thr Val Ala Ser Arg Arg Gly His Thr Thr Arg Leu Arg Gln  
 500 505 510  
 Val Leu Asn Ser Leu Gly Val Val Cys Tyr Tyr Thr Phe Ser Val Lys  
 515 520 525  
 Gly Phe Asn Glu Asn Tyr Ala Val Phe Thr Pro Asn Ser Arg Ser Met  
 530 535 540  
 Gln Glu Gln His Glu Glu Lys Ala Phe Gly Lys Leu Thr Gln Glu Gln  
 545 550 555 560  
 Ala Asp Glu Leu Tyr Ser Leu Leu Glu Thr Gly Glu Asp Ile Ala Thr  
 565 570 575  
 Arg Ile Arg His Phe Met Lys Lys His His Leu Pro Phe Met Ala Thr  
 580 585 590  
 Asp Arg Ser Val Leu Asn Leu Pro Ala Ile Gly Lys Ser Met Thr Phe  
 595 600 605  
 Asn Leu Val Gly Ile Thr Glu Glu Gly Arg Arg Ile Leu Arg Phe Asp  
 610 615 620  
 His Asp Ser Thr Arg Arg His Ser Ser Ile Ile Asp Lys Leu Gly Lys  
 625 630 635 640  
 Ile Tyr Ile Val Glu Asn Lys Ser Leu Ala Ala Tyr Leu Arg Gln Leu  
 645 650 655  
 Ser Lys Met Gly Glu Asp Pro Glu Asp Tyr Ala Ser Ile Trp Ser Tyr  
 660 665 670  
 Thr Glu Gly Glu Thr Glu Pro Arg Phe Lys Leu Tyr Glu Tyr Pro Glu  
 675 680 685  
 Phe Glu Phe His Thr Thr Glu Arg Met Ser Asn Leu Glu Val Leu  
 690 695 700

&lt;210&gt; 8736

&lt;211&gt; 134

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8736

Phe Ser Phe Ser Glu Lys Ser Tyr Phe Ser Tyr Phe Cys Arg Met Lys  
 1 5 10 15  
 Thr Ile Cys Ile Ile Leu Gly Thr Ile Ser Leu Gly Leu Gly Ile Leu



20 25 30  
 Gly Ile Phe Leu Pro Leu Leu Pro Thr Thr Pro Phe Leu Leu Leu Thr  
 35 40 45  
 Ala Ala Leu Tyr Phe Lys Gly Ser Pro Arg Leu Tyr Gln Trp Leu Leu  
 50 55 60  
 Asn His Lys Tyr Phe Gly Thr Tyr Ile Arg Asn Phe Arg Glu Asn Lys  
 65 70 75 80  
 Ala Ile Pro Leu Arg Ala Lys Ile Ile Ser Leu Leu Leu Met Trp Gly  
 85 90 95  
 Thr Met Leu Tyr Cys Ile Phe Phe Leu Ile Pro Leu Val Trp Val Lys  
 100 105 110  
 Ile Leu Leu Phe Leu Ile Ala Ala Gly Val Thr Tyr His Ile Leu Ser  
 115 120 125  
 Phe Lys Thr Leu Lys Lys  
 130

<210> 8737  
 <211> 404  
 <212> PRT  
 <213> B.fragilis

<400> 8737

Lys Asn His Arg Met Lys Val Lys Lys Ile Leu Leu Ser Met Cys Ala  
 1 5 10 15  
 Ile Ala Ala Leu Ala Ser Cys Ser Gln Asn Asp Asp Val Ala Val Pro  
 20 25 30  
 Thr Asp Ser Ala Pro Pro Ala Lys Val Thr Ile Arg Phe Ala Gly Ser  
 35 40 45  
 Glu Gly Met Thr Arg Ala Ile Gly Ser Glu Asp Ala Val Val Asn Asn  
 50 55 60  
 Leu Thr Ala Phe Phe Phe Asn Thr Ala Gly Ala Leu Ile Lys Ala Pro  
 65 70 75 80  
 Met Pro Val Ala Gly Asn Asp Leu Lys Pro Glu Ile Thr Leu Ala Thr  
 85 90 95  
 Thr Thr Asp Ala Ser Gln Val Val Leu Val Ala Asn Val Pro Ala Gly  
 100 105 110  
 Thr Ala Phe Ala Gly Val Thr Ser Leu Ser Lys Leu Lys Glu Phe Val  
 115 120 125  
 Val Ser Ser Leu Gly Thr Glu Ala Ser Ser Asn Phe Pro Ile Asn Gln  
 130 135 140  
 Thr Lys Thr Asn Leu Thr Met Ser Gly Trp Gly Ala Ile Asn Met Asn  
 145 150 155 160  
 Ala Asp Asn Asn Thr Gly Thr Ala Asn Val Lys Leu His Phe Met Ala  
 165 170 175  
 Ala Lys Ile Glu Thr Leu Lys Val Thr Ile Gly Gly Lys Asn Val Gly  
 180 185 190  
 His Tyr Ala Asp Thr Glu Asp Gly Val Thr Asp Asp Lys Trp Phe Thr  
 195 200 205  
 Ile Lys Gln Ala Tyr Leu Met Met Ala Gln Thr Asn Ser Val Leu Leu  
 210 215 220  
 Pro Ala Thr Asp Leu Gly Ala Trp Thr Gly Ala Phe Thr Pro Ala Thr  
 225 230 235 240  
 Phe Ala Tyr Ala Gly Gly Leu Ala Trp Gly Thr Arg Pro Trp Glu Asn  
 245 250 255  
 Pro Pro Val Asn Pro Asp Pro Val Lys Ala Thr Asp Tyr Leu Gln Thr  
 260 265 270  
 Thr Ile Pro Ala Gly Ala Thr Ser Asn Val Ile Asp Asn Ile Leu Val  
 275 280 285  
 Ser Ala Pro Trp Tyr Val Phe Glu Asn Ala Ser Pro Asn Ala Thr Gly

290	Val Val Leu Glu Val Val Cys Asn Val Arg Lys Asp Asn Asn Thr Leu	295	Val Cys Asn Val Arg Lys Asp Asn Asn Thr Leu	300	Val Cys Asn Val Arg Lys Asp Asn Asn Thr Leu
305	Glu Lys Glu Ser Arg Tyr Phe Thr Met Tyr Phe Gly Glu Lys Lys Thr	310	Tyr Phe Thr Met Tyr Phe Gly Glu Lys Lys Thr	315	Tyr Phe Gly Glu Lys Lys Thr
	325	330	335		
Gly Asp Ser Gly Asn Gln Pro Ile Leu Asn Ala Gly Gln Arg Tyr Ser	340	345	350		
Ile Asn Ile Ala Leu Asn Gly Ser Phe Asp Pro Gly Asp Gly Thr Gly	355	360	365		
Gly Gly Gly Thr Thr Asp Pro Thr Lys Pro Ser Val Asp Ala Asn Val	370	375	380		
Glu Ile Thr Val Ala Pro Ala Glu Trp Thr Ala Val Ala Val Ile Asn	385	390	395	400	
Lys Glu Phe Asn					

&lt;210&gt; 8738

&lt;211&gt; 777

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8738

Arg Lys Asn Ser Asn Arg Thr Met Ile Lys His Tyr Leu Lys Val Ala	1	5	10	15
Leu Arg Asn Leu Met Asn Phe Lys Val His Ser Leu Ile Ser Ala Ile	20	25	30	
Cys Leu Ala Ile Gly Ile Thr Cys Phe Ser Met Met Asn Tyr Phe Ile	35	40	45	
Asp Ala Ile Thr Gly Lys Val Glu Leu Ser Asp Asn Asn Lys Tyr Ser	50	55	60	
Ile Arg Leu Ser Gly Ala Ser Ser Gln Thr Ala Ala Asp Ile Tyr Leu	65	70	75	80
Phe Lys Glu Asp Phe Asp Tyr Leu Lys Glu Leu Pro Ile Ala Gly Ile	85	90	95	
Asp Thr Leu Val Ala Ser Ser Ser Tyr Ser Asn Gly Lys Glu Ile Thr	100	105	110	
Ala Ile Asp Lys Lys Gln Arg Glu Leu Pro Phe Leu Val Ser Phe Gln	115	120	125	
Asn Val Ser Ser Asn Tyr Phe Thr Tyr Asn Ser Leu Gln Leu Lys Tyr	130	135	140	
Gly Asn Gln Glu Ile Thr Ala Pro Asp Glu Val Ile Val Ser Arg Ser	145	150	155	160
Phe Ala Arg Lys Ala Phe Gly Glu Glu Asn Pro Ile Gly Gln Val Ile	165	170	175	
Arg Gln Glu Thr Glu Ala Ala Asn Pro Ser Asp Leu Met Val Tyr Lys	180	185	190	
Ile Val Asn Val Ala Leu Thr Glu Glu Lys Asp Phe His Gly Lys Thr	195	200	205	
Ile Asp Cys Tyr Phe Pro Leu Ser Ala Lys Ser Arg Thr Pro Leu Cys	210	215	220	
Ile Arg Ser Arg Leu Thr Gly Gln Thr Thr Thr Glu Ser Leu Asn Lys	225	230	235	240
Gln Leu Lys Gly Leu Thr Trp Lys His Gly Asp Gln Asp Ile Tyr Leu	245	250	255	
Tyr Ala Ser Leu Glu Ser Glu Gln Asn Ser Ser Val Gln Arg Thr Ile	260	265	270	
Ser Ile Leu Leu Ala Arg Phe Ile Ala Ser Leu Ile Leu Leu Ser Gly	275	280	285	
Leu Ile Asn Phe Leu Lys Phe Ile Ile Gln Met Phe Tyr Asn Arg Gln				

290	295	300
Arg Glu Leu Val Leu Arg Lys Cys Ile Gly Ser Asp Ile Lys Gly Leu		
305	310	315
Phe Ala Leu Leu Phe Ala Glu Ile Phe Trp Met Leu Ser Val Ala Phe		320
	325	330
Leu Leu Ser Leu Ala Val Thr Glu Ile Thr Leu Ser Leu Val Tyr Thr		335
	340	345
Tyr Ile Arg Pro Glu Asp Met Ile Ser Phe Ser Leu Val Asp Leu Tyr		350
	355	360
Gly Ser Gln Leu Gly Leu Tyr Leu Ala Leu Leu Leu Ile Cys Met Leu		365
	370	375
Ala Ile Leu Tyr Pro Ile Tyr Arg Leu Arg Arg Leu Ser Val Leu His		380
	385	390
Ser Val Val Gln Arg Gln Lys Arg His Val Phe Arg Asn Phe Met Ile		395
	405	410
Ala Leu Gln Leu Ala Ile Ser Ile Leu Phe Thr Gly Gly Val Phe Gly		415
	420	425
Ile Thr Leu Leu Phe Asn Glu Met Phe Glu Gly Met Tyr Arg Pro Leu		430
	435	440
Ser Thr Glu Glu Glu Asn Arg Val Ile Ser Ile Ser Val Asn Thr Ile		445
	450	455
Cys Met Gln Lys Asn Met Asp Ala Ile Leu Ser Asp Ile Gln Ser Leu		460
	465	470
Ser Glu Ile Thr Asp Arg Thr Ser Ala Phe Asn Thr Phe Asp Ala Asp		475
	485	490
Val Tyr Thr Tyr Met Thr Tyr Met Lys Asp Gly Lys Pro Arg Gly Asn		495
	500	505
Val Met Met Ile Gln Ala Glu Pro His Tyr Phe Glu Phe Phe Lys Ile		510
	515	520
Pro Phe Ser Gly Lys Leu Val Asp Lys Asp Ala Gln Gly Phe Val Tyr		525
	530	535
Ile Ser Glu Gln Phe Lys Glu Gln Leu Gln Arg Asp Ser Ile Ala Gly		540
	545	550
Ser Val Thr Leu Asp Gly Lys Glu Tyr Arg Ile Ala Gly Thr Tyr Arg		555
	565	570
Ala Leu Asn Arg Glu Asp Thr Gln Ser Ser Ser Val Gly Ser Val Phe		575
	580	585
Leu Val Asn Pro Gln Ala Tyr Thr Tyr Tyr Phe Lys Thr Leu His Ser		590
	595	600
Asp Ile Thr Pro Val Ala Leu Glu Lys Ile Thr Glu Ile Cys Arg Arg		605
	610	615
Tyr Val Pro Glu Thr Leu Pro Leu Asn Ile Arg Asn Thr Gly Asp Ser		620
	625	630
Lys Gln Ser Val Met Gly Thr Val Ala Leu Leu Gln Thr Ala Ser Leu		635
	645	650
Leu Leu Ala Ile Val Ser Ile Leu Leu Leu Ile Leu Ser Ile Tyr Ser		655
	660	665
Gly Ile Ser Met Asp Val Ile Asn Arg Gln Lys Glu Val Ala Ile Arg		670
	675	680
Lys Ile Asn Gly Ala Thr Pro Arg Val Ile Ala Leu Leu Phe Gly Lys		685
	690	695
Ile Tyr Leu Ile Ile Tyr Leu Ser Val Phe Val Ile Ile Tyr Pro Leu		700
	705	710
Val Arg Leu Val Leu Ile Ser Ile Thr Gln Lys Ser Asn Leu Gln Ser		715
	725	730
Ile Tyr Ser Trp Ser Trp Gly Val Leu Phe Phe Thr Met Ala Leu		735
	740	745
Leu Ile Phe Leu Val Thr Ala Tyr Lys Ile Tyr Lys Val Met His Leu		750
	755	760
		765

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Asn Pro Ala Ser Val Leu Lys Lys Glu  
770 775

<210> 8739  
<211> 316  
<212> PRT  
<213> B.fragilis

<400> 8739

Gln	Pro	Gly	Arg	Gln	Glu	Gly	Pro	Asp	Arg	Pro	His	Tyr	Asn	Lys	Arg
1				5					10					15	
Ser	His	Asn	Thr	Gln	Val	Val	Gln	Glu	Met	Ala	Thr	Ala	Ile	Ser	Ala
			20					25					30		
Gln	Ser	Val	Thr	Ser	Arg	Lys	Lys	Gly	Ala	Met	Lys	Arg	Thr	Ile	Leu
		35					40					45			
Ile	Leu	Leu	Gly	Trp	Met	Leu	Leu	Ser	Gln	Gly	Cys	Ser	Tyr	Gly	Val
	50					55					60				
Gly	Asp	Asp	Cys	Leu	Pro	Pro	Glu	Glu	Pro	Val	Pro	Ile	Arg	Met	Ala
65					70					75				80	
Ile	Ala	Glu	Gly	Lys	Leu	Ser	Thr	Arg	Ala	Pro	Val	Thr	Thr	Ile	Asp
				85					90					95	
Ala	Ser	Asn	Leu	Ser	Asn	Val	Gly	Ile	Tyr	Ala	Val	Ser	Glu	Gly	Ser
			100					105					110		
Ile	Ala	Gly	Gln	Tyr	Pro	Trp	Thr	Ser	Thr	Pro	Phe	Ala	Leu	Asn	Leu
		115					120					125			
Val	Pro	Ser	Gly	Ile	Ser	Gly	Ser	Gln	Leu	Ser	Phe	Asn	Pro	Lys	Leu
	130					135					140				
Tyr	Tyr	Pro	Leu	Gly	Gly	Lys	Arg	Val	Ile	Phe	Tyr	Ser	Tyr	Tyr	Pro
145					150					155					160
Arg	Thr	Thr	Ala	Thr	Ser	Gly	Ser	Asn	Tyr	Ile	Thr	Ala	Pro	Gly	Asn
				165					170					175	
Gly	Val	Ala	Pro	Ala	Tyr	His	Phe	Thr	Leu	Thr	Gly	Ala	Glu	Asp	Ile
			180					185					190		
Met	Tyr	Ala	Ala	Gly	Thr	Pro	Thr	Gly	Ser	Thr	Ser	Thr	Met	Pro	Val
		195					200					205			
Ser	Leu	Thr	Phe	Asn	His	Val	Leu	Thr	Gln	Leu	Gln	Leu	Asn	Thr	Ser
	210					215					220				
Leu	Leu	Gly	Ala	Leu	Ser	Ser	Ile	Lys	Leu	Leu	Gly	Val	Tyr	Asn	Lys
225					230					235					240
Gly	Thr	Leu	Asp	Ile	Gly	Asn	Gly	Asn	Val	Thr	Tyr	Asp	Ser	Ser	Thr
				245					250					255	
Thr	Asp	Ile	Thr	Leu	Thr	Val	Pro	Leu	Leu	Gly	Ser	Val	Thr	Asn	Thr
			260					265						270	
Val	Met	Val	Pro	Ala	Gly	Val	Ala	Ser	Tyr	Lys	Val	Glu	Val	Val	Leu
		275					280					285			
Leu	Leu	Ser	Leu	Leu	Lys	Arg	Thr	Tyr	Leu	Val	Lys	Pro	Thr	Ser	Gly
	290					295					300				
Asn	Phe	Gln	Pro	Gly	Val	Ile	Tyr	Thr	Ile	Ser	Leu				
305					310					315					

<210> 8740  
<211> 170  
<212> PRT  
<213> B.fragilis

<400> 8740

Glu	Tyr	Lys	Ser	Met	Glu	Ile	His	Ile	Gly	Asn	Arg	Val	Ala	Glu	Ile
1				5					10					15	
Glu	Leu	Val	Ser	Lys	Glu	Asp	Asn	Lys	Val	Val	Leu	Thr	Ile	Asp	Gly

[illegible]

<400>	8741														
Lys	Glu	Lys	Arg	Ile	Met	Asn	Ala	Ala	Lys	Val	Leu	Glu	Asp	Leu	Lys
1				5					10					15	
Arg	Arg	Phe	Pro	Asn	Glu	Pro	Glu	Tyr	His	Gln	Ala	Val	Glu	Glu	Val
			20					25					30		
Leu	Ser	Thr	Ile	Glu	Glu	Glu	Tyr	Asn	Lys	His	Pro	Glu	Phe	Asp	Lys
			35				40					45			
Ala	Asn	Leu	Ile	Glu	Arg	Leu	Cys	Ile	Pro	Asp	Arg	Val	Tyr	Gln	Phe
	50					55				60					
Arg	Val	Thr	Trp	Val	Asp	Asp	Lys	Gly	Asn	Val	Gln	Thr	Asn	Met	Gly
65					70				75					80	
Tyr	Arg	Val	Gln	His	Asn	Asn	Ala	Ile	Gly	Pro	Tyr	Lys	Gly	Gly	Ile
			85						90				95		
Arg	Phe	His	Ala	Ser	Val	Asn	Leu	Gly	Ile	Leu	Lys	Phe	Leu	Ala	Phe
			100					105					110		
Glu	Gln	Thr	Phe	Lys	Asn	Ser	Leu	Thr	Thr	Leu	Pro	Met	Gly	Gly	Gly
			115				120					125			
Lys	Gly	Gly	Ser	Asp	Phe	Ser	Pro	Arg	Gly	Lys	Ser	Asn	Ala	Glu	Val
	130					135					140				
Met	Arg	Phe	Thr	Gln	Ala	Phe	Met	Leu	Glu	Leu	Trp	Arg	His	Ile	Gly
145					150					155				160	
Pro	Glu	Thr	Asp	Val	Pro	Ala	Gly	Asp	Ile	Gly	Val	Gly	Gly	Arg	Glu
				165					170					175	
Val	Gly	Phe	Met	Phe	Gly	Met	Tyr	Lys	Lys	Leu	Ser	His	Glu	Phe	Thr
			180					185					190		
Gly	Thr	Phe	Thr	Gly	Lys	Gly	Arg	Glu	Phe	Gly	Gly	Ser	Leu	Ile	Arg
			195				200					205			
Pro	Glu	Ala	Thr	Gly	Tyr	Gly	Asn	Ile	Tyr	Phe	Leu	Met	Glu	Met	Leu
	210					215					220				
Lys	Thr	Lys	Gly	Thr	Asp	Leu	Lys	Gly	Lys	Val	Cys	Leu	Ile	Ser	Gly
225					230					235				240	
Ser	Gly	Asn	Val	Ala	Gln	Tyr	Thr	Ala	Glu	Lys	Val	Leu	Glu	Leu	Gly
				245					250					255	
Gly	Lys	Val	Val	Thr	Met	Ser	Asp	Ser	Asp	Gly	Tyr	Ile	Tyr	Asp	Pro

260	265	270
Asp Gly Ile Asp Arg Ala Lys Leu	Asp Tyr Ile Met Glu Leu Lys Asn	
275	280	285
Leu Tyr Arg Gly Arg Ile Arg Glu Tyr Ala Glu Thr Tyr Gly Cys Lys		
290	295	300
Tyr Val Glu Gly Ala Arg Pro Trp Gly Glu Lys Gly Asp Ile Ala Leu		
305	310	315
Pro Ser Ala Thr Gln Asn Glu Leu Asn Gly Asp Asp Ala Arg Lys Leu		
325	330	335
Val Ala Asn Gly Val Ile Ala Val Ser Glu Gly Ala Asn Met Pro Ser		
340	345	350
Thr Pro Glu Ala Ile Lys Val Phe Gln Asp Ala Lys Ile Leu Tyr Ala		
355	360	365
Pro Gly Lys Ala Ala Asn Ala Gly Gly Val Ser Val Ser Gly Leu Glu		
370	375	380
Met Thr Gln Asn Ser Ile Lys Leu Ser Trp Ser Ser Glu Glu Val Asp		
385	390	395
Glu Lys Leu Lys Ser Ile Met Lys Asn Ile His Glu Ala Cys Val Gln		
405	410	415
Tyr Gly Thr Glu Pro Asp Gly Tyr Val Asn Tyr Val Lys Gly Ala Asn		
420	425	430
Val Ala Gly Phe Met Lys Val Ala Lys Ala Met Met Ala Gln Gly Ile		
435	440	445
Val		

&lt;210&gt; 8742

&lt;211&gt; 294

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8742

Asn Asn Arg Ser Met Lys Lys Leu Met Phe Ala Val Ile Ala Cys Ala	
1 5 10 15	
Met Gly Leu Ser Gly Cys Ser Ser Glu Asp Asp Cys Ala Thr Asn Pro	
20 25 30	
Glu Pro Ala Gly Asp Val Thr Glu Ile Lys Leu Ser Ala Gly Ile Gln	
35 40 45	
Gly Val Ala Thr Arg Ser Pro Val Ser Thr Asn Asp Asn Ile Thr Ala	
50 55 60	
Pro Phe Val Ala Ser Ala Thr Thr Gly Asp Tyr Thr Thr Asn Ala Trp	
65 70 75 80	
Ser Ser Thr Val Thr Phe Val Ala Ser Pro Thr Pro Thr Ala Ala Leu	
85 90 95	
Ser Phe Ser Pro Ala Arg Tyr Tyr Pro Val Asp Asn Ser Pro Ile Tyr	
100 105 110	
Ile Arg Gly Tyr Tyr Pro Ala Gly Thr Leu Ser Gly Lys Thr Val Thr	
115 120 125	
Leu Ala Gly Asp Gly Thr Glu Asp Val Met Leu Thr Ala Gln Ala Ser	
130 135 140	
Gly Thr Lys Ala Thr Ala Gly Ala Leu Ser Phe Val Phe Asn His Leu	
145 150 155 160	
Leu Thr Gln Leu Gln Phe Lys Leu Val Ala Gly Ala Gly Tyr Pro Ala	
165 170 175	
Ser Gly Val Asn Val Thr Ser Leu Val Ile Lys Gln Gln Lys Thr Pro	
180 185 190	
Ala Thr Leu Asp Leu Asn Thr Ser Ser Leu Thr Tyr Thr Lys Asp	
195 200 205	
Leu Thr Leu Ser Gly Thr Phe Pro Ile Leu Thr Ala Gly Ser Thr Ile	

210		215		220
Asn Asn Tyr Pro Met Val Lys Ser Gly Glu Ala Leu Thr Val Ala Val				
225		230		235
Thr Thr Ser Asp Gly Val Thr Tyr Pro Glu Ser Thr Ile Ser Val Thr				
	245		250	255
Thr Glu Val Gly Lys Ser His Leu Ile Thr Leu Thr Phe Thr Pro Lys				
	260		265	270
Glu Ile Thr Ser Ser Ile Ser Val Thr Ala Trp Gln Thr Gly Gly Thr				
	275	280		285
Gly Ser Ser Thr Leu Gln				
290				

&lt;210&gt; 8743

&lt;211&gt; 936

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8743

Arg Gln Thr Ser Ile Leu Gln Met Phe Ser Leu His Ser Pro Asp Asp		
1	5	10
Ser Tyr Asp Glu Ala Phe Leu Ala Asn Tyr Ile Ser Ile Asn Leu Lys		
	20	25
Pro Glu Ile Leu Arg Ile Ser Gly Val Gly Asp Met Met Ile Met Glu		
	35	40
Gly Asp Tyr Ser Leu Arg Ile Trp Met Lys Pro Asp Val Met Ala Gln		
	50	55
Tyr Arg Leu Ile Pro Ser Asp Val Ser Thr Val Leu Ala Glu Gln Asn		
65	70	75
Ile Glu Ser Ala Thr Gly Ser Phe Gly Glu Asn Ser Asp Glu Thr Tyr		
	85	90
Gln Tyr Thr Met Lys Tyr Lys Gly Arg Arg Ile Thr Pro Glu Glu Phe		
	100	105
Gly Glu Ile Val Ile Arg Ser Thr Asp Asp Gly Gln Val Leu Lys Leu		
	115	120
Lys Asp Ile Ala Thr Ile Glu Leu Gly Gln Glu Ser Tyr Ala Tyr Ser		
	130	135
Gly Thr Thr Asp Gly His Asn Gly Val Ser Cys Met Leu Phe Gln Thr		
145	150	155
Ala Gly Ser Asn Ala Thr Glu Val Asn Asn Gln Ile Asn Arg Phe Leu		
	165	170
Glu Glu Ala Arg Lys Glu Leu Pro Gln Gly Val Glu Leu Thr Gln Leu		
	180	185
Met Ser Ser Asn Asp Phe Leu Tyr Ala Ser Ile His Glu Val Val Lys		
	195	200
Thr Leu Leu Glu Ala Ile Leu Leu Val Ile Leu Val Val Tyr Val Phe		
	210	215
Leu Gln Asp Ile Arg Ser Thr Leu Ile Pro Leu Val Gly Ile Ile Val		
225	230	235
Ser Leu Ile Gly Thr Phe Ala Phe Met Ala Ile Ala Gly Phe Ser Ile		
	245	250
Asn Leu Ile Thr Leu Phe Ala Leu Val Leu Val Ile Gly Thr Val Val		
	260	265
Asp Asp Ala Ile Val Val Val Glu Ala Val Gln Ala Arg Phe Asp Val		
	275	280
Gly Tyr Lys Ser Ser Tyr Met Ala Ser Val Asp Ala Met Lys Gly Ile		
	290	295
Ser Asn Ala Val Ile Thr Ser Ser Leu Val Phe Met Ala Val Phe Ile		
305	310	315
Pro Val Ser Phe Met Ser Gly Thr Ser Gly Thr Phe Tyr Thr Gln Phe		

[illegible]



Met Leu Ile Gly Leu Leu Ala Lys Thr Ala Ile Leu Leu Thr Glu Tyr  
                             805                            810                            815  
 Ala Ala Glu Arg Arg Lys Ala Gly Met Gly Leu Ile Ala Ser Ala Leu  
                             820                            825                            830  
 Ser Ala Ala Lys Ala Arg Leu Arg Pro Ile Leu Met Thr Ala Leu Thr  
                             835                            840                            845  
 Met Ile Phe Gly Leu Leu Pro Leu Met Val Ala Ser Gly Val Gly Ala  
                             850                            855                            860  
 Asn Gly Asn Arg Ser Leu Gly Thr Gly Ala Val Gly Gly Met Val Ile  
                             865                            870                            875                            880  
 Gly Thr Leu Ala Leu Leu Phe Ile Val Pro Ser Leu Phe Ile Ala Phe  
                             885                            890                            895  
 Gln Trp Leu Gln Glu Arg Ile Arg Pro Val Gln Ile Glu Pro Ser His  
                             900                            905                            910  
 Asp Trp Gln Ile Gln Thr Glu Gln Glu Val Ser Glu His Glu Lys Glu  
                             915                            920                            925  
 Glu Ala Lys Asn Arg Pro Leu Lys  
                             930                            935

<210> 8744  
 <211> 102  
 <212> PRT  
 <213> B.fragilis

<400> 8744  
 His Lys Lys Gly Cys Met Asn Asp Lys Ile Lys Ile Asn Leu Gln Ile  
 1                            5                            10                            15  
 Ala Asp Ser Tyr Tyr Pro Leu Thr Ile Asn Arg Asp Glu Glu Glu Thr  
                             20                            25                            30  
 Val Arg Glu Ala Ala Lys Gln Val Asn Ile Arg Leu Asn Ala Tyr Arg  
                             35                            40                            45  
 Glu His Tyr Arg Asn Val Ala Pro Glu Lys Ile Ile Ala Met Val Ala  
                             50                            55                            60  
 Tyr Gln Phe Ser Leu Glu Lys Leu Gln Leu Leu Gln Arg Asn Asp Thr  
 65                            70                            75                            80  
 Gln Pro Tyr Thr Ala Lys Ile Glu Glu Leu Thr Glu Met Leu Glu Glu  
                             85                            90                            95  
 Tyr Phe Arg Asn Glu Glu  
                             100

<210> 8745  
 <211> 185  
 <212> PRT  
 <213> B.fragilis

<400> 8745  
 Lys Arg Thr Gly Leu Ile Cys Asn Arg Tyr Glu Asn Ile Leu Ser Cys  
 1                            5                            10                            15  
 Arg Asp Asp Ile Arg Arg Ile Asn Thr Thr Phe Val Gly Ile Gln Arg  
                             20                            25                            30  
 Phe Gln Pro Asn Ile Asn Pro Tyr Asn Met Thr Pro Asp Phe Asp Tyr  
                             35                            40                            45  
 Ser Glu Val Pro Phe Gly Phe Asn Tyr Cys Leu Asn Lys Ser Cys Lys  
                             50                            55                            60  
 Gln Ala Ser Thr Cys Leu Arg Tyr Arg Leu Tyr Thr His Ile Pro Ala  
 65                            70                            75                            80  
 Ala Cys Gln Thr Ile Arg Ile Ile Asn Pro Val Tyr Ala Ala Thr Ile  
                             85                            90                            95  
 Asp Asp Val Cys Pro Phe Phe Met Pro Asp Lys Lys Val Arg Tyr Ala

100 105 110  
 Leu Gly Ile Thr His Leu Leu Asp His Val Pro Tyr Ser Asp Ala Val  
 115 120 125  
 Ser Ile Lys Arg Gln Met Leu Ala His Phe Lys Gln Ala Thr Tyr Tyr  
 130 135 140  
 Arg Cys Arg Arg Lys Glu Arg Met Leu Asp Pro Ser Glu Gln Glu Tyr  
 145 150 155 160  
 Ile Arg Lys Leu Phe Val Ser Lys Gly Ile Lys Glu Leu Pro Val Tyr  
 165 170 175  
 Asp Glu Tyr Ile Glu Lys Tyr Asp Trp  
 180 185

<210> 8746  
 <211> 96  
 <212> PRT  
 <213> B.fragilis

<400> 8746  
 Gly Met Lys Gly Thr Tyr Trp Tyr Ala Val Asp Tyr Ala Gly Thr Gly  
 1 5 10 15  
 His Leu Phe Thr Tyr Lys Pro Glu Arg Asp Ala Gly Ile Trp Asn Gly  
 20 25 30  
 Glu Glu Ala Leu Gln Val Ser Gln Gly Ala Leu Arg Glu Val Phe Pro  
 35 40 45  
 Lys Ile Thr Trp Gln Asp Ser Pro Val Val Val Thr Leu Glu Val Leu  
 50 55 60  
 Pro Cys Glu Glu Thr Phe Arg Leu Arg Leu Ser Lys Asn Cys Gly Tyr  
 65 70 75 80  
 Ile Leu Arg Lys Tyr Leu Arg Phe Pro Arg Lys Glu Lys Thr Asn Asp  
 85 90 95

<210> 8747  
 <211> 142  
 <212> PRT  
 <213> B.fragilis

<400> 8747  
 Tyr Pro Leu Ile Lys Arg Ile Thr Asn Lys Asn Ile Met Asn Leu Arg  
 1 5 10 15  
 Thr Phe Ile Glu Arg Pro Val Leu Ser Ala Val Ile Ser Ile Thr Ile  
 20 25 30  
 Val Val Val Gly Ile Ile Gly Leu Phe Thr Leu Pro Val Glu Gln Tyr  
 35 40 45  
 Pro Asp Ile Ala Pro Pro Thr Ile Met Val Ser Thr Ser Tyr Phe Gly  
 50 55 60  
 Ala Ser Ala Glu Thr Leu Gln Lys Ser Val Ile Ala Pro Leu Glu Glu  
 65 70 75 80  
 Ala Ile Asn Gly Val Glu Asp Met Thr Tyr Met Thr Ser Ser Ala Thr  
 85 90 95  
 Asn Ala Gly Thr Val Ser Ile Thr Val Tyr Phe Lys Gln Gly Thr Asp  
 100 105 110  
 Pro Asp Met Ala Ala Val Asn Val Gln Asn Arg Val Ser Lys Ala Thr  
 115 120 125  
 Gly Gln Leu Pro Ser Glu Val Asn Gln Val Gly Val Thr Thr  
 130 135 140

<210> 8748  
 <211> 374  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8748

Ile Gly Ile Met Ile Glu Lys Val Ser Lys Val Lys Gln Ala Ile Leu  
 1 5 10 15  
 Phe Ala Cys Cys Leu Ala Ala Thr Gly Cys Lys Gln Ala Pro Gln Ala  
 20 25 30  
 Thr Val Glu Ser Gly Tyr Lys Val Ile Thr Leu Ala Pro Thr Asp Arg  
 35 40 45  
 Thr Leu Ser Ser Thr Tyr Ser Ala Thr Ile Arg Gly Arg Gln Asp Ile  
 50 55 60  
 Glu Ile Tyr Pro Gln Val Ser Gly Thr Leu Thr Gln Val Cys Val Ser  
 65 70 75 80  
 Glu Gly Glu Arg Val Lys Arg Gly Gln Ser Leu Phe Ile Ile Asp Gln  
 85 90 95  
 Val Pro Tyr Glu Ala Ala Leu Gln Thr Ala Leu Ala Asn Val Glu Ala  
 100 105 110  
 Ala Lys Ala Ser Leu Ala Thr Ala Gln Leu Thr Tyr Asp Ser Lys Gln  
 115 120 125  
 Glu Leu Tyr Lys Gln Asn Val Val Ser Thr Phe Asp Leu Ser Thr Ala  
 130 135 140  
 Lys Asn Ser Leu Leu Ala Ala Gln Ala Gln Leu Ala Gln Met Lys Ala  
 145 150 155 160  
 Gln Glu Val Asn Ala Arg Asn Asn Leu Ser Tyr Thr Leu Val Lys Ser  
 165 170 175  
 Pro Ala Asp Gly Val Val Gly Thr Leu Pro Tyr Arg Val Gly Thr Leu  
 180 185 190  
 Val Ser Ala Ser Leu Pro Glu Pro Leu Thr Thr Val Ser Asp Asn Ser  
 195 200 205  
 Asp Met Tyr Val Tyr Phe Ser Met Thr Glu Asn Gln Leu Leu Gly Leu  
 210 215 220  
 Ile Arg Arg Tyr Gly Ser Lys Glu Glu Ala Leu Lys Gln Met Pro Glu  
 225 230 235 240  
 Ile Gly Leu Gln Leu Asn Asp Arg Ser Asp Tyr Pro Gln Gln Gly Arg  
 245 250 255  
 Ile Glu Thr Ile Ser Gly Val Ile Asp Arg Asn Thr Gly Thr Val Ser  
 260 265 270  
 Leu Arg Ala Val Phe Pro Asn Arg Glu Gly Leu Leu His Ser Gly Gly  
 275 280 285  
 Ala Gly Asn Val Ile Val Pro Thr Glu Lys Ala Gly Ala Leu Val Ile  
 290 295 300  
 Pro Gln Ala Ala Thr Phe Glu Val Gln Asp Lys Val Phe Ala Tyr Lys  
 305 310 315 320  
 Val Val Asp Gly Lys Ala Gln Ser Ala Pro Val Gln Val Thr Arg Val  
 325 330 335  
 Asn Gly Gly Gln Glu Tyr Ile Val Glu Ser Gly Leu Gln Pro Gly Asp  
 340 345 350  
 Val Ile Val Ala Glu Gly Val Gly Leu Leu Arg Glu Gly Thr Glu Ile  
 355 360 365  
 Lys Thr Ile Asn Gly Glu  
 370

&lt;210&gt; 8749

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8749

Ile Arg Ile Met Lys Glu Leu Val Glu Lys Ile Ala Thr Leu Val Ala

1	5	10	15
Glu Phe Asn Lys Asp Ala Asn Ala Gln Ile Glu Asn Gly Asn Lys Ala			
20	25	30	
Ala Gly Thr Arg Ala Arg Lys Ala Ser Leu Glu Ile Glu Lys Ala Met			
35	40	45	
Lys Glu Phe Arg Lys Val Ser Leu Glu Glu Ser Lys Lys			
50	55	60	

<210> 8750  
 <211> 226  
 <212> PRT  
 <213> B.fragilis

<400> 8750	
Arg Gly Val Met Gly Arg Arg Asn Arg Ile Met His Lys Met Thr Glu	
1	5
Met Glu Ile Thr Tyr Asn Ile Gln Thr Ile Tyr Thr Tyr Arg Asn Glu	
20	25
Asn Met Pro Glu Asp Ser Thr Lys Val Tyr Arg Phe Ser Arg Lys Val	
35	40
Ser Arg Arg Ile Trp Lys Tyr Ala Leu Ser Thr Pro Asp Phe Arg Ser	
50	55
Phe Leu Glu Ala Lys Ser Arg Glu Cys Ser Asp Thr Ile Ser Arg Met	
65	70
Asn Gln Glu Leu Gln Asn Val Val Val Thr Phe His Ile Ser Phe Asn	
85	90
Gly Asp Ile Pro Phe Val Gly Ser Ala Val Cys Phe Phe Lys Thr Val	
100	105
Ser Gly Gly Glu Leu Arg Cys Arg Tyr Asn Gln Ser Ile Leu Phe Glu	
115	120
Glu Thr Leu Pro Gly Gly Lys Tyr Leu Arg Asp Ser Ser Ile Glu Gly	
130	135
Met Ile Gln Lys Glu Arg Pro Glu Asn Ser Ala Phe Gly Leu Leu Leu	
145	150
Phe Ala Val Ser Leu Val Ser Val Phe Gly Ile Leu Thr Val Pro Phe	
165	170
Ala Phe Asn Leu Ala Arg Phe Pro Leu Val Pro Ala Gly Phe Thr Val	
180	185
Ile Ala Val Leu Ile Leu Leu Thr Val Cys Leu Arg His Met Asn Arg	
195	200
Arg Arg Ile Thr Arg Arg Met Glu Ile Gln Asp Lys Arg Gln Glu Pro	
210	215
Ile Lys	220
225	

<210> 8751  
 <211> 411  
 <212> PRT  
 <213> B.fragilis

<400> 8751	
Phe Cys Tyr Ile Lys Leu Lys Leu Met Thr Ser Val Lys Leu Lys Leu	
1	5
Asn Lys Thr Arg Ala Leu Lys Asp Gly Asn Tyr Pro Val Val Phe Gln	
20	25
Leu Ile His Gln Lys Arg Lys Lys Ile Ile Tyr Thr Lys Tyr Arg Met	
35	40
Lys Glu Glu Asp Phe Ile Ile Ile Ala Gly Asn Val Val Ser Gly Cys	
50	55
	60

His Thr Gly Cys Lys Ile Ser Arg Glu Leu Leu Arg Ile Tyr Lys Gln  
 65 70 75 80  
 Leu Thr Ala Arg Val Arg Arg Leu Glu Ser Arg Gly Glu Glu Tyr Thr  
 85 90 95  
 Ile Asn Asp Ile Thr Thr Val Met Phe Ser Lys Val Thr Gly Lys Phe  
 100 105 110  
 Leu Leu Leu Pro Tyr Ile Asp Thr Gln Ile Glu Trp Lys Lys Ser Ile  
 115 120 125  
 Met Lys Asn Gly Thr Ala Ala Tyr Gln Ser Thr Tyr Ala Ser Leu  
 130 135 140  
 Ala Lys Tyr Ile Gly Lys Lys Glu Val Lys Ile Ser Gln Val Asn His  
 145 150 155 160  
 Arg Phe Val Thr Cys Tyr Arg Asp Phe Leu Ser Lys Asn Gly Ala Thr  
 165 170 175  
 Glu Asn Thr Ile Gly Tyr Tyr Leu Arg Asn Phe Arg Ala Leu Tyr Asn  
 180 185 190  
 Leu Ala Val Lys Asp Gly Leu Val Pro Pro Cys Asp Tyr Pro Phe Lys  
 195 200 205  
 Glu Ile Cys Thr Lys Pro Cys Lys Thr Val Lys Arg Ala Leu Asp Arg  
 210 215 220  
 Glu Gln Met Val Lys Leu Ala Cys Leu Ser Leu His Ser Asp Ala Glu  
 225 230 235 240  
 Leu Lys Arg Ser Leu Asp Leu Phe Leu Phe Gly Phe Tyr Ala Gln Gly  
 245 250 255  
 Met Ala Phe Val Asp Ile Ala Tyr Leu Lys Trp Lys Asn Ile Ser Gly  
 260 265 270  
 Asn Arg Ile Ile Tyr Arg Arg His Lys Ser Lys Gln Leu Ile Gln Ile  
 275 280 285  
 Val Ile Thr Pro Gln Ile Lys Ser Ile Ile Asp Glu His Gly Asn Asn  
 290 295 300  
 Thr Asn Asn Ala Glu Glu Tyr Val Phe Ser Val Ile Lys Asn Asn Ala  
 305 310 315 320  
 Asn Glu Tyr Thr Gln Tyr Arg Thr Ala Leu Gly Arg Thr Asn Arg His  
 325 330 335  
 Leu Lys Ile Ile Ser Ala Lys Leu Lys Ile Asp Pro Pro Leu Thr Thr  
 340 345 350  
 Tyr Thr Ala Arg His Thr Trp Ala Thr Leu Ala Arg Glu Tyr Gly Ala  
 355 360 365  
 Pro Val Ser Ala Ile Ser Ala Gly Leu Gly His Thr Lys Glu Glu Met  
 370 375 380  
 Thr Leu Val Tyr Leu Lys Glu Leu Asp Leu Ala Pro Leu His Arg Ile  
 385 390 395 400  
 Asn Lys Met Val Asn Asn Leu Leu Glu Arg Lys  
 405 410

&lt;210&gt; 8752

&lt;211&gt; 65

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8752

Arg Ile Asn Met Ala Trp Met Val Thr Gln Lys Asn Ile Lys Ile His  
 1 5 10 15  
 Thr Cys Ile Asp Gly Ile Asp Ser Val Glu Asp Val Arg Val Val Ile  
 20 25 30  
 Ser His Lys Lys Leu Lys Ala Leu Gly Ala Lys Arg Arg Val Tyr Lys  
 35 40 45  
 Asp Thr Arg Glu Ser Phe Phe Leu Ile Glu Ser Asp Cys Glu Ile Ile  
 50 55 60

[illegible]

<400> 8753

Ser	Thr	Asn	Ile	Met	Ile	Gln	Asn	Ser	Ile	Ser	Asp	Asn	Arg	Ile	Val
1				5					10					15	
Trp	Leu	Asp	Val	Ile	Arg	Cys	Val	Ala	Met	Ile	Met	Val	Ile	Gly	Val
			20					25					30		
His	Cys	Ile	Asp	Pro	Phe	Tyr	Ile	Ser	Pro	Thr	Met	Arg	Ala	Ile	Pro
		35					40					45			
Glu	Tyr	Thr	His	Trp	Ala	Ala	Ile	Tyr	Gly	Ser	Leu	Leu	Arg	Pro	Ser
	50					55					60				
Val	Pro	Leu	Phe	Val	Met	Met	Thr	Gly	Leu	Leu	Leu	Leu	Pro	Val	Lys
65					70					75				80	
Lys	Gln	Pro	Leu	Gly	Lys	Phe	Tyr	Lys	Lys	Arg	Ile	Tyr	Arg	Val	Leu
				85					90					95	
Phe	Pro	Phe	Leu	Ile	Trp	Ser	Val	Leu	Tyr	Ser	Met	Phe	Pro	Trp	Val
			100					105					110		
Thr	Gly	Val	Leu	Gly	Leu	Pro	Lys	Glu	Ile	Ile	Gly	Asp	Phe	Phe	Cys
		115					120					125			
Tyr	Thr	Gln	Gly	Gln	Glu	Ser	Gln	Ser	Leu	Ile	Asp	Ser	Leu	Lys	Asp
	130					135					140				
Val	Ala	Met	Ile	Pro	Phe	Asn	Phe	Ser	His	Lys	Glu	Asn	His	Met	Trp
145					150					155				160	
Tyr	Ile	Tyr	Leu	Leu	Ile	Gly	Leu	Tyr	Leu	Tyr	Met	Pro	Phe	Phe	Ser
				165					170					175	
Ala	Trp	Ile	Glu	Asn	Ala	Asp	Arg	Lys	Thr	Lys	Arg	Ala	Phe	Leu	Leu
			180					185					190		
Ile	Trp	Ile	Ile	Ser	Leu	Phe	Ile	Pro	Tyr	Leu	Lys	Glu	Tyr	Val	Ala
		195					200					205			
Asn	Cys	Leu	Phe	Glu	Arg	Ser	Gly	Tyr	Val	Phe	Gly	Thr	Asp	Thr	Trp
	210					215					220				
Asn	Glu	Phe	Gly	Leu	Phe	Tyr	Tyr	Phe	Ala	Gly	Phe	Asn	Gly	Tyr	Leu
225					230					235				240	
Leu	Leu	Gly	His	Tyr	Val	Lys	Lys	Gly	Asn	Asp	Trp	Ser	Leu	Met	Lys
				245					250					255	
Thr	Phe	Ile	Leu	Cys	Ile	Leu	Met	Phe	Ala	Val	Gly	Tyr	Tyr	Ile	Thr
		260						265					270		
Tyr	Thr	Gly	Phe	Ser	Thr	Thr	Ala	Ser	Asn	Pro	Asn	Ala	Thr	Glu	Thr
		275					280					285			
Glu	Met	Glu	Leu	Phe	Phe	Thr	Phe	Cys	Ser	Pro	Asn	Val	Leu	Leu	Met
		290				295					300				
Thr	Leu	Ala	Thr	Phe	Leu	Leu	Leu	Gln	Lys	Val	Val	Ile	Thr	Asn	Ser
305					310					315				320	
Thr	Val	Ile	Lys	Val	Leu	Ala	Asn	Met	Thr	Gln	Cys	Gly	Phe	Gly	Ile
				325					330					335	
Tyr	Met	Val	His	Tyr	Phe	Val	Val	Gly	Pro	Phe	Phe	Leu	Leu	Ile	Gly
			340					345					350		
Pro	Ser	Ser	Leu	Pro	Ile	Pro									

<210> 8754  
 <211> 507  
 <212> PRT  
 <213> B.fragilis

<400> 8754

Glu	Met	Asn	Met	Ile	Lys	Arg	Ile	Leu	Val	Ala	Asn	Arg	Gly	Glu	Ile
1			5						10					15	
Ala	Val	Arg	Val	Met	Arg	Ser	Cys	Arg	Glu	Met	Glu	Ile	Thr	Ser	Ile
			20					25					30		
Ala	Val	Phe	Ser	Glu	Ala	Asp	Arg	Thr	Ala	Lys	His	Val	Leu	Tyr	Ala
		35				40						45			
Asp	Glu	Ala	Tyr	Cys	Ile	Gly	Pro	Ala	Ala	Ser	Lys	Glu	Ser	Tyr	Leu
	50					55					60				
Asn	Ile	Glu	Lys	Ile	Ile	Glu	Val	Ala	Lys	Ser	Cys	His	Ala	Asp	Ala
65					70					75				80	
Ile	His	Pro	Gly	Tyr	Gly	Phe	Leu	Ser	Glu	Asn	Ala	Thr	Phe	Ala	Arg
			85						90					95	
Arg	Cys	Arg	Glu	Glu	Gly	Ile	Thr	Phe	Ile	Gly	Pro	Asp	Pro	Glu	Thr
			100					105					110		
Met	Glu	Ala	Met	Gly	Asp	Lys	Ile	Ser	Ala	Arg	Ile	Lys	Met	Ile	Glu
			115				120						125		
Ala	Gly	Val	Pro	Val	Val	Pro	Gly	Thr	Gln	Asp	Asn	Leu	Lys	Ser	Val
	130					135					140				
Glu	Glu	Ala	Val	Glu	Leu	Cys	Asn	Gln	Ile	Gly	Tyr	Pro	Val	Met	Leu
145					150					155					160
Lys	Ala	Ser	Met	Gly	Gly	Gly	Gly	Lys	Gly	Met	Arg	Leu	Ile	His	His
				165					170					175	
Ala	Asp	Glu	Val	Ala	Glu	Ala	Tyr	Thr	Thr	Ala	Lys	Ser	Glu	Ser	Leu
			180					185					190		
Ser	Ser	Phe	Gly	Asp	Asp	Thr	Val	Tyr	Leu	Glu	Lys	Phe	Val	Glu	Glu
		195				200						205			
Pro	His	His	Ile	Glu	Phe	Gln	Ile	Leu	Gly	Asp	Lys	His	Gly	Asn	Val
	210					215						220			
Ile	His	Leu	Cys	Glu	Arg	Glu	Cys	Ser	Val	Gln	Arg	Arg	Asn	Gln	Lys
225					230					235					240
Ile	Val	Glu	Glu	Ser	Pro	Ser	Val	Phe	Ile	Thr	Pro	Glu	Leu	Arg	Arg
				245					250					255	
Asp	Met	Gly	Glu	Lys	Ala	Val	Ala	Ala	Lys	Ala	Val	Asn	Tyr	Ile	
			260					265					270		
Gly	Ala	Gly	Thr	Ile	Glu	Phe	Leu	Val	Asp	Lys	His	Arg	Asn	Tyr	Tyr
		275					280					285			
Phe	Leu	Glu	Met	Asn	Thr	Arg	Leu	Gln	Val	Glu	His	Pro	Ile	Thr	Glu
	290					295					300				
Glu	Val	Val	Gly	Val	Asp	Leu	Val	Lys	Glu	Gln	Ile	Lys	Val	Ala	Asp
305					310					315					320
Gly	Gln	Val	Leu	Gln	Leu	Arg	Gln	Glu	Asp	Ile	Gln	Gln	Arg	Gly	His
				325					330					335	
Ala	Ile	Glu	Cys	Arg	Ile	Cys	Ala	Glu	Asp	Thr	Glu	Met	Asn	Phe	Met
			340					345					350		
Pro	Ser	Pro	Gly	Val	Ile	Lys	Gln	Ile	Thr	Glu	Pro	Asn	Gly	Ile	Gly
		355				360						365			
Val	Arg	Ile	Asp	Ser	Tyr	Val	Tyr	Glu	Gly	Tyr	Glu	Ile	Pro	Ile	Tyr
	370					375					380				
Tyr	Asp	Pro	Met	Ile	Gly	Lys	Leu	Ile	Val	Trp	Ala	Thr	Thr	Arg	Glu
385					390					395					400
Tyr	Ala	Ile	Glu	Arg	Met	Arg	Arg	Val	Leu	His	Glu	Tyr	Lys	Leu	Thr
				405					410					415	

GenBank accession number: U00096.1 (B. fragilis strain 6309) (1988-1990)

Gly Val Lys Asn Asn Ile Ser Tyr Leu Arg Ala Ile Met Asp Thr Pro  
                   420                  425                  430  
 Asp Phe Val Glu Gly His Tyr Asp Thr Gly Phe Ile Ala Lys Asn Gly  
                   435                  440                  445  
 Glu Val Leu Gln Gln Cys Ile Thr Arg Thr Ser Glu Arg Ala Glu Asn  
                   450                  455                  460  
 Ile Ala Leu Ile Ala Ala Tyr Met Asp Tyr Leu Met Asn Leu Glu Glu  
                   465                  470                  475                  480  
 Asn Asn Ser Gly Leu Ala Ala Asp Asn Arg Pro Ile Ser Lys Trp Lys  
                   485                  490                  495  
 Glu Phe Gly Leu His Lys Gly Val Leu Arg Ile  
                   500                  505

<210> 8755  
 <211> 110  
 <212> PRT  
 <213> B.fragilis

<400> 8755  
 Ile Arg Asn Ile Ser Phe Lys Leu Thr Gly Asn Asn Thr Thr Trp Gln  
 1                  5                  10                  15  
 Thr Leu Ser Tyr Leu Arg Cys Tyr Thr Ser Thr Tyr Lys Lys Gln Pro  
                   20                  25                  30  
 Pro Met Ser Gln Glu Met Lys Ala Phe Pro Gly Met Lys Ala Ser Gln  
                   35                  40                  45  
 Lys Leu Asn Phe Asn His Ser Glu Val Ile Ile Asn Ser Ala Pro Asp  
                   50                  55                  60  
 Arg Lys Val Ile Leu Glu Ser Thr Leu Leu Glu Gln Ser Phe Val Glu  
 65                  70                  75                  80  
 Lys Gly Cys Gly Glu Thr Thr Pro His Ala Trp Lys Thr Thr Ser Lys  
                   85                  90                  95  
 Glu Ser Leu Lys Arg Pro Val Phe Asn Glu Ile Trp Tyr Thr  
                   100                  105                  110

<210> 8756  
 <211> 462  
 <212> PRT  
 <213> B.fragilis

<400> 8756  
 Leu Ile Asp Met Asn Leu Ile Asn Asp Ile Leu Trp Thr Tyr Ile Leu  
 1                  5                  10                  15  
 Ile Ala Met Leu Leu Gly Cys Ala Ile Trp Phe Thr Ile Lys Thr Arg  
                   20                  25                  30  
 Phe Val Gln Phe Arg Met Ile Gly Glu Met Leu Arg Leu Leu Lys Asp  
                   35                  40                  45  
 Ser Ala Gly Lys Glu Glu His Gly Glu Lys His Ile Ser Ser Phe Gln  
                   50                  55                  60  
 Ala Phe Ala Ile Ser Leu Ala Ser Arg Val Gly Thr Gly Asn Leu Ala  
 65                  70                  75                  80  
 Gly Val Ala Thr Ala Ile Ala Ile Gly Gly Pro Gly Ala Ile Phe Trp  
                   85                  90                  95  
 Met Trp Ile Ile Ala Leu Leu Gly Ala Ser Ser Ala Phe Val Glu Ser  
                   100                  105                  110  
 Thr Leu Ala Gln Leu Tyr Lys Glu Lys Gly Lys Glu Ser Phe Ile Gly  
                   115                  120                  125  
 Gly Pro Ala Tyr Tyr Met Lys Lys Gly Leu Lys Lys Pro Trp Met Gly  
                   130                  135                  140  
 Ile Leu Phe Ala Ile Leu Ile Thr Val Thr Phe Gly Phe Ala Phe Asn



145 150 155 160  
 Ser Val Gln Ser Asn Thr Ile Cys Ala Ala Val Glu His Ala Phe Gly  
 165 170 175  
 Ile Ser His Val Pro Met Gly Ile Ile Leu Thr Gly Leu Thr Leu Leu  
 180 185 190  
 Ile Ile Phe Gly Gly Ile Gln Arg Ile Ala Lys Val Ser Ser Ile Ile  
 195 200 205  
 Val Pro Val Met Ala Leu Gly Tyr Val Gly Leu Ala Leu Val Ile Val  
 210 215 220  
 Leu Ile Asn Ile Thr His Leu Pro Asp Val Ile Gly Thr Ile Val Ser  
 225 230 235 240  
 His Ala Phe Gly Trp Gln Gln Ala Leu Gly Gly Gly Val Ala Ala Ala  
 245 250 255  
 Leu Met Gln Gly Ile Lys Arg Gly Leu Phe Ser Asn Glu Ala Gly Met  
 260 265 270  
 Gly Ser Ala Pro Asn Val Ala Ala Thr Ala Phe Val Ser His Pro Val  
 275 280 285  
 Lys Gln Gly Leu Ile Gln Thr Leu Gly Val Phe Thr Asp Thr Leu Ile  
 290 295 300  
 Ile Cys Ser Cys Thr Ala Phe Ile Ile Leu Phe Ser Gly Ala Pro Leu  
 305 310 315 320  
 Asp Gly Ser Thr Asn Gly Val Gln Leu Thr Gln His Ala Leu Asn Asn  
 325 330 335  
 Glu Ile Gly Ser Ile Gly Gly Ile Phe Val Ala Val Ala Leu Phe Phe  
 340 345 350  
 Phe Ala Phe Ser Ser Ile Ile Gly Asn Tyr Tyr Tyr Gly Glu Ala Asn  
 355 360 365  
 Ile Arg Tyr Leu Thr His Lys Arg Trp Ile Val Tyr Leu Tyr Arg Leu  
 370 375 380  
 Leu Val Gly Gly Met Val Trp Val Gly Ala Met Ser Thr Leu Asp Phe  
 385 390 395 400  
 Val Trp Gly Leu Ala Asp Ile Thr Met Gly Leu Met Ala Ile Cys Asn  
 405 410 415  
 Leu Ile Ala Ile Ala Phe Leu Gly Lys Tyr Ala Phe Arg Leu Leu Gln  
 420 425 430  
 Asp Tyr Arg Glu Gln Lys Lys Ser Gly Ile Lys Ser Pro Val Phe Thr  
 435 440 445  
 Lys Asn Lys Met Lys Asp Ile Glu Lys Asp Ile Glu Cys Trp  
 450 455 460

<210> 8757  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8757  
 Gln Thr Asp Ile Ala Ser Met Ala Asn His His Leu Asn Glu Glu Lys  
 1 5 10 15  
 Pro Ser Thr Lys Val Ser Gln Ser Leu Leu Leu Gly Asp Asn Phe Leu  
 20 25 30  
 Ser Pro Glu Arg Lys Lys Phe Phe Thr Tyr Thr Thr Gln Ser Glu Thr  
 35 40 45  
 Ile Glu Lys Gly Ile Asn Thr Ser Pro Ser Thr Gly Phe Phe His  
 50 55 60

<210> 8758  
 <211> 1255  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8758

Ser Ile Cys Met Ile Asn Lys Ile Ile Arg Tyr Phe Leu Glu Asn Arg  
 1 5 10 15  
 Val Ile Thr Ile Leu Leu Leu Thr Leu Val Val Val Trp Gly Ile Ser  
 20 25 30  
 Thr Ala Pro Phe Asn Trp His Gly Gly Ile Val Pro Arg Asn Pro Ile  
 35 40 45  
 Pro Val Asp Ala Ile Pro Asp Ile Gly Asp Asn Gln Gln Ile Val Ala  
 50 55 60  
 Thr Glu Trp Met Gly Arg Ser Pro Lys Asp Ile Gln Asp Gln Ile Thr  
 65 70 75 80  
 Tyr Pro Leu Thr Thr Ser Leu Leu Gly Ile Pro Gly Val Lys Thr Ile  
 85 90 95  
 Arg Ser Ser Ser Met Phe Gly Met Ser Phe Ile Tyr Ile Ile Phe Glu  
 100 105 110  
 Asp Asp Ile Glu Phe Tyr Trp Ser Arg Ser Arg Ile Leu Glu Lys Leu  
 115 120 125  
 Asn Ser Leu Pro Pro Gly Thr Leu Pro Glu Asn Val Gln Pro Thr Leu  
 130 135 140  
 Gly Pro Asp Ala Thr Ala Leu Gly Gln Ile Tyr Trp Tyr Thr Leu Glu  
 145 150 155 160  
 Gly Arg Asp Pro Lys Thr Gly Lys Pro Ala Gly Gly Trp Asn Ala Glu  
 165 170 175  
 Glu Leu Arg Thr Ile Gln Asp Phe Tyr Val Lys Tyr Ser Leu Ser Ala  
 180 185 190  
 Ala Glu Gly Val Ser Glu Val Ala Ser Ala Gly Gly Phe Ile Lys Glu  
 195 200 205  
 Tyr Gln Ile Glu Leu Asn Pro Asp Ala Met Tyr Ser Phe Asn Val Ser  
 210 215 220  
 Val Met Asp Val Met Asn Ala Val Lys Lys Ser Asn Leu Asp Ile Gly  
 225 230 235 240  
 Ala Glu Thr Met Glu Val Asn Lys Val Glu Tyr Leu Ile Arg Gly Leu  
 245 250 255  
 Gly Tyr Val Lys Asn Val Ala Asp Ile Glu Asn Thr Val Val Thr Val  
 260 265 270  
 Arg Glu Gly Val Pro Val Arg Ile Ser Asp Ile Ala Phe Val Asn Ile  
 275 280 285  
 Gly Pro Gly Thr Arg Arg Gly Gly Leu Asp Lys Glu Gly Val Glu Ala  
 290 295 300  
 Val Gly Gly Val Val Ile Ala Arg Tyr Gly Ser Asn Pro Leu Glu Val  
 305 310 315 320  
 Ile Asn Asn Val Lys Glu Lys Ile His Glu Met Asp Ala Gly Met Pro  
 325 330 335  
 Gln Lys Thr Leu Ala Asp Gly Thr Val Ser Lys Val Thr Val Val Pro  
 340 345 350  
 Phe Tyr Asp Arg Thr Gly Leu Ile Lys Glu Thr Ile Gly Thr Leu Glu  
 355 360 365  
 Thr Ser Leu Ser His Glu Ile Leu Ile Cys Ile Ile Val Ile Ile Val  
 370 375 380  
 Leu Val Leu Asn Leu Arg Ala Ser Val Val Ile Ala Ser Met Leu Pro  
 385 390 395 400  
 Ile Ala Val Leu Ala Thr Phe Ile Leu Met Arg Tyr Thr Gly Ile Glu  
 405 410 415  
 Ala Asn Ile Val Ala Leu Ser Gly Ile Ala Ile Ala Ile Gly Val Met  
 420 425 430  
 Val Asp Val Gly Val Val Phe Val Glu Ser Ile Ile Arg Tyr Met Glu  
 435 440 445  
 Met Pro Glu Asn Lys Gly Ile Thr Arg Gly Lys Pro Phe Val Gly Leu

450	Ile Tyr Lys Ala Val	455	Ser Glu Val Ser Gly Ala	460	Ile Ala Thr Ala Met
465	Ile Thr Thr Ile Val	470	Ser Phe Leu Pro Val	475	Phe Ala Met Gln Ala Gln
	485		490		495
Glu Gly Lys Met Phe	Ser Pro Leu Ala	Tyr Thr Lys Thr	Tyr Ala Leu		
500	505	510			
Ala Ser Ala Phe Val	Leu Gly Leu Ile	Val Leu Pro Thr	Leu Ala Tyr		
515	520	525			
Ile Leu Phe Ser Val	Arg Ile Asp Ser	Arg Leu Ile Arg	Arg Val Met		
530	535	540			
Asn Cys Val Leu Ile	Ala Ser Ala Ile	Val Leu Phe Ala	Val Tyr Asp		
545	550	555			
Ser Val Pro Ala Leu	Gly Leu Thr Ala	Val Gly Ile Asn	Asn Leu Leu		
565	570	575			
Ala Tyr Arg Trp Lys	Asn Pro Lys Thr	Gly Asn Tyr Val	Asn Ile Gly		
580	585	590			
Ile Ala Leu Thr Val	Ala Val Phe Tyr	Leu Ser Glu Glu	Trp Leu Pro		
595	600	605			
Met Gly Pro Gln Arg	Gly Leu Ser Val	Asn Val Leu Ile	Val Ala Gly		
610	615	620			
Cys Val Ala Ile Ile	Leu Ala Leu Leu	Trp Ile Leu Val	Ile Phe Tyr		
625	630	635			
Glu Arg Ile Leu Arg	Trp Cys Leu Ala	Asn Arg Trp Lys	Phe Met Met		
645	650	655			
Ile Pro Ala Ala Thr	Val Val Cys Gly	Phe Leu Ile Gly	Arg Ser Ile		
660	665	670			
Gly Lys Glu Phe Met	Pro Ser Leu Asn	Glu Gly Ser Phe	Leu Leu Met		
675	680	685			
Pro Thr Ser Met Pro	His Thr Gly Ile	Glu Gln Asn Leu	Asp Tyr Val		
690	695	700			
Glu Lys Leu Asp Lys	Arg Leu Ala Ala	Ile Pro Glu Val	Glu Thr Ala		
705	710	715			
Ile Gly Lys Trp Gly	Arg Val Asn Ser	Ala Leu Asp Pro	Ala Pro Val		
725	730	735			
Gln Met Phe Glu Asn	Thr Ile Asn Tyr	Arg Pro Glu Tyr	Ile Ile Gly		
740	745	750			
Glu Asp Gly Lys Arg	Ala Arg Phe Arg	Val Asn Tyr Asp	Gly Ala Phe		
755	760	765			
Leu Leu Lys Gly Gly	Gly Thr Tyr Asn	Pro Ala Asn Gly	Phe Arg Leu		
770	775	780			
Ile Pro Ala Asp Ser	Leu Val Pro Asp	Ser Arg Gly Asp	Tyr Phe Arg		
785	790	795			
Gln Trp Arg Pro Glu	Ile Lys Asn Ala	Asn Asp Ile Trp	Gln Gln Ile		
805	810	815			
Val Asn Val Thr His	Leu Pro Gly Leu	Thr Ser Ala Pro	Lys Leu Gln		
820	825	830			
Pro Ile Glu Ala Arg	Leu Val Met Leu	Ser Thr Gly Met	Arg Ala Pro		
835	840	845			
Met Gly Val Lys Val	Tyr Gly Pro Thr	Leu Glu Asp Ile	Glu Gln Gly		
850	855	860			
Gly Lys Ala Ile Glu	Gln Ala Leu Lys	Ser Val Pro Ser	Val Ile Pro		
865	870	875			
Ser Ser Val Phe Tyr	Asp Arg Ala Val	Gly Ala Pro Tyr	Leu Glu Ile		
885	890	895			
Lys Leu Asn Arg Glu	Ser Met Ala Arg	Tyr Gly Val Ala	Val Gly Asp		
900	905	910			
Leu Gln Glu Val Leu	Ser Ala Ala Val	Gly Gly Met Ala	Leu Thr Arg		
915	920	925			

450 455 460  
 465 470 475 480  
 485 490 495  
 500 505 510  
 515 520 525  
 530 535 540  
 545 550 555 560  
 565 570 575  
 580 585 590  
 595 600 605  
 610 615 620  
 625 630 635 640  
 645 650 655  
 660 665 670  
 675 680 685  
 690 695 700  
 705 710 715 720  
 725 730 735  
 740 745 750  
 755 760 765  
 770 775 780  
 785 790 795 800  
 805 810 815  
 820 825 830  
 835 840 845  
 850 855 860  
 865 870 875 880  
 885 890 895  
 900 905 910  
 915 920 925

Thr Val Glu Gly Arg Glu Arg Phe Pro Ile Arg Leu Arg Tyr Ala Arg  
 930 935 940  
 Glu Leu Arg Asp Ser Pro Glu Ala Leu Ser Met Leu Leu Val Pro Thr  
 945 950 955 960  
 Ala Thr Gly Ile Gln Val Pro Leu Lys Glu Leu Ala Asp Ile Glu Tyr  
 965 970 975  
 Ser Arg Gly Ala Gln Met Ile Gln Ser Glu Asn Thr Phe Leu Val Gly  
 980 985 990  
 Tyr Val Ile Phe Asp Lys Leu Ser Gly Arg Ala Glu Val Asp Val Val  
 995 1000 1005  
 Lys Glu Ala Ser Asn Leu Leu Glu Ala Lys Val Lys Ser Gly Glu Leu  
 1010 1015 1020  
 Leu Leu Pro Lys Gly Val Ser Tyr Lys Phe Ala Gly Asn Tyr Glu Gln  
 1025 1030 1035 1040  
 Gln Gln Arg Ala Thr Asp Arg Leu Met Ile Val Val Pro Leu Ala Leu  
 1045 1050 1055  
 Leu Ile Val Leu Leu Val Leu Tyr Phe Gln Phe Arg Thr Val Thr Ala  
 1060 1065 1070  
 Ser Leu Ile His Phe Ser Gly Val Phe Val Ala Phe Ala Gly Gly Phe  
 1075 1080 1085  
 Ile Leu Leu Trp Leu Tyr Gly Gln Pro Trp Phe Met Asn Phe Ser Ile  
 1090 1095 1100  
 Ala Gly Glu Asn Met Arg Asp Leu Phe Gln Met His Pro Ile Asn Leu  
 1105 1110 1115 1120  
 Ser Val Ala Val Trp Val Gly Phe Ile Ala Leu Phe Gly Val Ala Thr  
 1125 1130 1135  
 Asp Asp Gly Val Leu Met Gly Thr Tyr Ile His His Val Phe Leu Glu  
 1140 1145 1150  
 Arg Asp Pro Arg Thr Lys Tyr Asp Ile Arg Glu Ala Val Val Glu Ala  
 1155 1160 1165  
 Gly Leu Lys Arg Val Arg Pro Ala Ala Met Thr Thr Ala Thr Thr Leu  
 1170 1175 1180  
 Ile Ala Leu Leu Pro Val Leu Thr Ser Thr Gly Lys Gly Ala Asp Ile  
 1185 1190 1195 1200  
 Met Val Pro Met Ala Ile Pro Thr Phe Gly Gly Met Leu Ile Gln Ser  
 1205 1210 1215  
 Met Thr Met Phe Val Val Pro Val Leu Gln Cys Trp Trp Arg Glu Thr  
 1220 1225 1230  
 Val Glu Arg Arg Arg Glu Lys Lys Asn Gly Ser Glu Val Ser Glu Pro  
 1235 1240 1245  
 Val Thr Gly Ser Pro Gly Ile  
 1250 1255

<210> 8759  
 <211> 293  
 <212> PRT  
 <213> B.fragilis

<400> 8759  
 Tyr Lys Cys Met Phe Ala Asn Lys Val Lys Lys Val Ala Ala Ile His  
 1 5 10 15  
 Asp Leu Ser Gly Met Gly Arg Val Ser Leu Thr Val Val Ile Pro Ile  
 20 25 30  
 Leu Ser Ser Met Gly Phe Gln Val Cys Pro Leu Pro Thr Ala Ile Leu  
 35 40 45  
 Ser Asn His Thr Gln Tyr Pro Asp Phe Thr Phe Leu Asp Leu Thr Asp  
 50 55 60  
 Glu Met Pro Arg Ile Ile Ala Glu Trp Lys Arg Leu Glu Val Glu Phe  
 65 70 75 80

Asp Ala Ile Tyr Thr Gly Tyr Leu Gly Ser Pro Arg Gln Ile Gln Ile  
 85 90 95  
 Val Ser Asp Phe Ile Arg Asp Phe Arg Arg Lys Asp Ser Leu Thr Val  
 100 105 110  
 Ile Asp Pro Val Leu Gly Asp Asn Gly Lys Leu Tyr Ser Asn Phe Asn  
 115 120 125  
 Glu Ser Met Val Val Glu Met Gln His Leu Val Thr His Ala Asp Val  
 130 135 140  
 Ile Thr Pro Asn Leu Thr Glu Leu Phe Tyr Leu Leu Asp Arg Pro Tyr  
 145 150 155 160  
 Lys Glu Ser Asn Thr Asp Gln Glu Leu Lys Glu Tyr Leu Arg Cys Leu  
 165 170 175  
 Ser Asp Lys Gly Pro Glu Val Val Ile Ile Thr Ser Val Pro Val Leu  
 180 185 190  
 Asp Glu Pro His Lys Thr Ser Val Tyr Ala Tyr Asn Arg Thr Gly Asn  
 195 200 205  
 Arg Tyr Trp Lys Ile Thr Cys Pro Tyr Leu Pro Ala His Tyr Pro Gly  
 210 215 220  
 Thr Gly Asp Thr Phe Thr Ser Val Ile Thr Gly Ala Leu Leu Gln Gly  
 225 230 235 240  
 Asp Ser Leu Pro Ile Ala Leu Asp Arg Ala Thr Gln Phe Ile Leu Gln  
 245 250 255  
 Gly Ile Arg Ala Thr Phe Gly Tyr Glu Tyr Asp Asn Arg Glu Gly Ile  
 260 265 270  
 Leu Leu Glu Lys Val Leu His Asn Leu Asp Met Pro Ile Gln Ser Ser  
 275 280 285  
 Ser Tyr Glu Leu Ile  
 290

&lt;210&gt; 8760

&lt;211&gt; 377

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8760

Lys Ala Ile Phe Ala Ser Glu Lys Ala Lys Ile His Leu Arg Ser Gln  
 1 5 10 15  
 Thr Ile Ala Gln Gln Pro Glu Pro Ala Ser Phe Ile Arg Ser Asp Met  
 20 25 30  
 Lys Arg Lys Leu Cys Leu Leu Leu Phe Phe Cys Leu Leu Leu Thr Ala  
 35 40 45  
 Pro Ala Leu Arg Ala Gln Gln Lys Ala Thr Pro Arg Ser Gly Glu Gly  
 50 55 60  
 Ile Ser Thr Phe Leu Leu Arg His Asn Arg Ala Pro Lys Lys Tyr Tyr  
 65 70 75 80  
 Asn Asp Phe Ile Glu Leu Asn Lys Ala Lys Leu Gly Lys Ser Arg Thr  
 85 90 95  
 Leu Lys Met Gly Val Thr Tyr Leu Ile Pro Pro Val Lys Lys Ala Ser  
 100 105 110  
 Ala Ala Thr Ser Gly Lys Thr Thr Glu Ala Ala Ala Glu Lys Thr Ser  
 115 120 125  
 Ala His His Pro Arg Arg Thr Glu Val Asn Glu Pro Leu Phe Gly Lys  
 130 135 140  
 Trp Leu Ser Asn Val Lys Val Thr Ser Asn Arg Leu Ala Gly Thr Cys  
 145 150 155 160  
 Phe Tyr Val Val Ser Gly His Gly Gly Pro Asp Pro Gly Ala Ile Gly  
 165 170 175  
 Arg Val Gly Lys His Glu Leu His Glu Asp Glu Tyr Ala Tyr Asp Ile  
 180 185 190

Ala Leu Arg Leu Ala Arg Asn Leu Met Gln Glu Gly Ala Glu Val Arg  
 195 200 205  
 Ile Ile Ile Gln Asp Ala Lys Asp Gly Ile Arg Asp Glu Ala Tyr Leu  
 210 215 220  
 Ser Asn Ser Lys Arg Glu Thr Cys Met Gly Ser Pro Ile Pro Leu Asn  
 225 230 235 240  
 Gln Val Gln Arg Leu Gln Gln Arg Cys Asp Lys Ile Asn Ala Leu Tyr  
 245 250 255  
 Arg Lys Asp Arg Lys Lys Tyr Lys Tyr Cys Arg Ala Ile Phe Ile His  
 260 265 270  
 Val Asp Ser Arg Ser Lys Gly Thr Gln Thr Asp Val Phe Phe Tyr His  
 275 280 285  
 Ser Asn Arg Lys Ala Glu Ser Lys Arg Leu Ala Lys Asn Met Lys Glu  
 290 295 300  
 Thr Phe Glu Ser Lys Tyr Gly Lys His Gln Pro Asn Arg Gly Phe Ser  
 305 310 315 320  
 Gly Thr Val Ser Gly Arg Asn Leu Tyr Val Leu Ala His Thr Thr Pro  
 325 330 335  
 Ala Ser Val Phe Val Glu Leu Gly Asn Ile Gln Asn Thr Phe Asp Gln  
 340 345 350  
 Arg Arg Leu Val Ile Pro Ser Asn Arg Gln Ala Leu Ala Lys Trp Leu  
 355 360 365  
 Met Glu Gly Phe Ile Lys Asp Tyr Lys  
 370 375

<210> 8761  
 <211> 106  
 <212> PRT  
 <213> B.fragilis

<400> 8761  
 Cys Leu Ile Met Val Leu Leu Leu Phe Phe Leu Tyr Asp Arg Lys Asn  
 1 5 10 15  
 His Ala Ile Ser Leu Asn Gly Tyr Tyr Ile Ile Gln Tyr Ile Pro Glu  
 20 25 30  
 His Ser Phe Ala Ile Val Arg Thr Arg Thr Lys Ala Val His Tyr Arg  
 35 40 45  
 Thr Ile Thr Ser Gly Tyr Pro Trp Ile Leu Asn Arg Ser Phe Cys Lys  
 50 55 60  
 Lys Arg Tyr Ile Arg Asn Leu Ile Leu Asn Ile Glu Ser Asp Lys Phe  
 65 70 75 80  
 Ile Gly Arg Ile Gln Trp Lys Asn Pro Val Asp Gly Asp Val Phe Ile  
 85 90 95  
 Pro Phe Ser Ile Val Ser Leu Cys Val Val  
 100 105

<210> 8762  
 <211> 62  
 <212> PRT  
 <213> B.fragilis

<400> 8762  
 Thr Ser Val Ile Ser Ser Leu Val Cys Pro Asn Pro Ala Leu Ile Ala  
 1 5 10 15  
 Glu Thr Gly Ala Pro Tyr Ser Leu Ala Ser Val Ala His Val Trp Arg  
 20 25 30  
 Ala Val Tyr Val Val Asn Gly Gly Ser Ile Phe Ser Phe Ala Glu Ile  
 35 40 45  
 Ile Phe Lys Cys Leu Leu Val Arg Pro Lys Ala Val Arg Tyr

50

55

60

<210> 8763  
 <211> 348  
 <212> PRT  
 <213> B.fragilis

<400> 8763

Arg Met Asn Ile Leu Phe Gly Leu Ile Leu Leu Val Ile Phe Thr Pro  
 1 5 10 15  
 Leu Ile Asn Ile Ile Ile Val Met Lys His Ile Ser Ile Asn Tyr Ile  
 20 25 30  
 Leu Thr Thr Ala Leu Ala Leu Gly Ile Gly Ile Ser Ile Pro Val Leu  
 35 40 45  
 Ile Gly Ser Thr Cys Leu Ser Glu Gln His Ser Val Gln Ser Glu Val  
 50 55 60  
 Pro Tyr Cys Val Thr Pro Pro Thr Val Pro Glu Gln Ala Val Phe Asp  
 65 70 75 80  
 Gly Asp Thr Ile Asp Leu Arg Arg Tyr Asp Arg Arg Glu Arg Met Asp  
 85 90 95  
 Arg Glu Leu Met Ser Phe Ile Tyr Met His Ser Ser Thr Met Gln Met  
 100 105 110  
 Ile Lys Arg Ala Asn Arg Tyr Phe Pro Val Ile Glu Pro Leu Leu Lys  
 115 120 125  
 Ala Asn Gly Ile Pro Asp Asp Phe Lys Tyr Leu Met Val Ile Glu Ser  
 130 135 140  
 Asn Leu Asn Pro Ile Ala Arg Ser Pro Ala Gly Ala Ala Gly Leu Trp  
 145 150 155 160  
 Gln Phe Met Pro Val Thr Ala Arg Glu Phe Gly Leu Glu Val Asn Asp  
 165 170 175  
 Asn Val Asp Glu Arg Tyr His Ile Glu Lys Ala Thr Ala Ala Ala Cys  
 180 185 190  
 Arg Tyr Phe Lys Gln Ala Tyr Ala Lys Tyr Gly Asp Trp Met Ala Val  
 195 200 205  
 Ser Ala Ser Tyr Asn Ala Gly Gln Gly Arg Ile Ser Ser Gln Leu Asp  
 210 215 220  
 Lys Gln Leu Ala Asp His Ala Met Asp Leu Trp Leu Ala Glu Glu Thr  
 225 230 235 240  
 Ser Arg Tyr Met Phe Arg Leu Leu Ala Val Lys Glu Val Phe Gly Asn  
 245 250 255  
 Pro Gln Arg Phe Gly Phe Leu Leu Lys Arg Glu His Leu Tyr Pro Ala  
 260 265 270  
 Ile Pro Tyr Lys Glu Val Ala Val Asp Thr Glu Ile Ser Asp Leu Ser  
 275 280 285  
 Asn Phe Ala Gln Lys Gln Gly Ile Thr Tyr Ala Gln Leu Arg Asp Ala  
 290 295 300  
 Asn Pro Trp Leu Arg Gly Ser Ser Leu Lys Asn Lys Thr Gly Lys Lys  
 305 310 315 320  
 Tyr Val Leu His Ile Pro Thr Gln Glu Gly Met Asn Tyr Asp Pro Arg  
 325 330 335  
 Lys Thr Val Pro His Glu His Lys Trp Val Ile Asp  
 340 345

<210> 8764  
 <211> 197  
 <212> PRT  
 <213> B.fragilis

<400> 8764

Thr Met Asp Ile Glu Ile Glu Asn His Pro Leu Glu Pro Phe Leu Pro  
 1 5 10 15  
 Ala Asn Ala Arg Leu Leu Met Leu Gly Ser Phe Pro Pro Gln Lys Lys  
 20 25 30  
 Arg Trp Ser Met Asp Phe Tyr Tyr Pro Asn Leu Asn Asn Asp Met Trp  
 35 40 45  
 Arg Ile Val Gly Leu Leu Phe Phe Asn Asn Lys Asp Tyr Phe Leu Asn  
 50 55 60  
 Glu Thr Arg Lys Ala Phe Cys Arg Glu Arg Ile Ile Ser Phe Leu Asn  
 65 70 75 80  
 Asp Lys Gly Ile Ala Leu Phe Asp Thr Ala Ser Ala Ile Arg Arg Leu  
 85 90 95  
 Gln Asp Asn Ala Ser Asp Lys Phe Leu Glu Val Val Gln Pro Thr Asp  
 100 105 110  
 Ile Ser Arg Leu Leu Gly Gln Leu Pro Glu Cys Lys Ala Ile Val Thr  
 115 120 125  
 Thr Gly Gln Lys Ala Thr Asp Thr Leu Arg Ala Gln Phe Glu Val Glu  
 130 135 140  
 Glu Pro Lys Val Gly Asp Phe Ser Glu Phe Val Phe Asp Gly Arg Pro  
 145 150 155 160  
 Met Arg Leu Tyr Arg Met Pro Ser Ser Ser Arg Ala Tyr Pro Leu Ala  
 165 170 175  
 Leu Asp Lys Lys Ala Ala Ala Tyr Arg Thr Met Tyr Gln Asp Leu Gln  
 180 185 190  
 Met Leu Asn Ile Glu  
 195

&lt;210&gt; 8765

&lt;211&gt; 213

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8765

Leu Met Ser Ile Phe Ala Asn Leu Phe Lys Lys Gln Ala Asp Ala Asp  
 1 5 10 15  
 Ala Lys Val Val Gly Asn Val Glu Asp Phe Val Ser Leu Thr Arg Val  
 20 25 30  
 Tyr Phe Gln Ser Val Ile Ala Val Asn Leu Gly Ile Thr Asn Ile Arg  
 35 40 45  
 Phe Leu Pro Asp Val Ala Asn Phe Lys Arg Leu Phe Lys Val Ala Thr  
 50 55 60  
 Gln Gly Gly Lys Leu Gly Leu Ala Glu Lys Ser Ala Ser Arg Lys Met  
 65 70 75 80  
 Leu Met Gln Asp Tyr Gly Ile Ser Glu Ser Phe Phe Lys Glu Ile Asp  
 85 90 95  
 Thr Ser Ile Lys Lys Asn Cys Arg Thr Gln Asn Asp Val Gln Ala Tyr  
 100 105 110  
 Leu Phe Met Tyr Gln Gly Phe Ser Asp Leu Met Met Leu Met Gly  
 115 120 125  
 Asn Leu Met Gln Trp Lys Phe Arg Met Pro Ala Ile Phe Lys Lys Ala  
 130 135 140  
 Leu Arg Ser Met Thr Glu Lys Thr Val His Asp Val Cys Thr Lys Thr  
 145 150 155 160  
 Val Trp Lys Ala Asp Asp Val His Lys Thr Ala Ala Ala Val Arg Gln  
 165 170 175  
 Tyr Lys Glu Arg Leu Gly Phe Ser Glu Gln Trp Met Ser Glu Tyr Val  
 180 185 190  
 Tyr Asn Ile Val Leu Leu Ala Lys Lys Glu Pro Lys His Lys Asp Glu  
 195 200 205



Glu Ala Lys Ala Lys  
210

<210> 8766  
<211> 117  
<212> PRT  
<213> B.fragilis

<400> 8766

Pro Leu Ile Ile Ser Thr Thr Met Phe Thr Val Ile Lys Arg Met Glu  
1 5 10 15  
Ile Ser Ala Ala His Lys Leu Ile Leu Pro Tyr Arg Ser Lys Cys Ala  
20 25 30  
Ser Leu His Gly His Asn Trp Ile Ile Thr Val Tyr Cys Arg Ser Glu  
35 40 45  
Arg Leu Asn Ala Asp Gly Met Val Val Asp Phe Thr Gln Ile Lys Gln  
50 55 60  
Ala Val Lys Glu Lys Leu Asp His Arg Asn Leu Asn Glu Val Leu Pro  
65 70 75 80  
Phe Asn Pro Thr Ala Glu Asn Ile Ala Arg Trp Val Cys Lys Gln Ile  
85 90 95  
Pro Gln Cys Tyr Lys Val Glu Val Gln Glu Ser Glu Ala Asn Thr Val  
100 105 110  
Ile Tyr Glu Lys Asp  
115

<210> 8767  
<211> 551  
<212> PRT  
<213> B.fragilis

<400> 8767

Ile Ile Thr Phe Lys Lys Cys Asn Thr Met Lys Leu Asn Lys Val Lys  
1 5 10 15  
Asn Met Trp Arg Ile Leu Ser Val Ile Ala Leu Leu Gly Ser Thr Leu  
20 25 30  
Cys Thr Ser Cys Ile Ser Glu Asp Ile Asn Arg Asn Pro Leu Leu Pro  
35 40 45  
Thr Lys Glu Asp Glu Lys Met Asp Gly Val Ile Tyr Gly Ala Tyr Leu  
50 55 60  
Pro Asn Leu Glu Lys Ser Val Ile Pro Ile Gly Thr Ala Ser Glu Ser  
65 70 75 80  
Thr Glu Pro Val Asn Arg Tyr Gln Ile Gly Val Asn Leu Ala Gly Asp  
85 90 95  
Ala Trp Ala Gly Tyr Met Ser Pro Arg Asp Asn Lys Phe Asn Gly Ser  
100 105 110  
Lys Asn Phe Thr Asn Tyr Phe Met Tyr Glu Asn Trp Val Asn Tyr Val  
115 120 125  
Tyr Ser Phe Met Val Thr Asp Val Tyr Ser Pro Trp Met Gln Ile Lys  
130 135 140  
Arg Ile Ser Gln Asp Glu Gly Thr Arg Asn Asp Glu Ile Tyr Ala Leu  
145 150 155 160  
Ala Gln Ile Ile Lys Ile Ala Ala Leu His Arg Thr Thr Asp Met Phe  
165 170 175  
Gly Pro Ile Pro Tyr Ser Gln Val Gly Lys Gly Ser Phe Lys Val Ala  
180 185 190  
Tyr Asp Ser Gln Glu Ser Val Tyr Arg Ser Phe Leu Lys Glu Leu Glu  
195 200 205  
Glu Ala Val Gln Thr Leu Asp Asp Tyr Ser Asn Lys Ser Lys Glu Val

210	215	220
Leu Pro Ala Phe Asp Ile Val Tyr Asn Gly Asp Val Asn Lys Trp Met		
225	230	235
Arg Phe Ala Asn Ser Leu Met Leu Arg Leu Ala Ile Arg Val Arg Phe		240
	245	250
Ala Asp Ala Gly Leu Ala Lys Glu Tyr Ala Glu Lys Ala Glu Lys His		255
	260	265
Pro Ala Gly Leu Ile Asp Ser Lys Glu Leu Ala Ala His Met Gly Lys		270
	275	280
Gly Ala Gly Leu Gln Met Lys Asn Pro Leu Lys Val Ile Asn Glu Glu		285
	290	295
Tyr Asn Asp Thr Arg Met Gly Ala Thr Ile Tyr Ser Tyr Leu Ala Gly		300
305	310	315
Tyr Asn Asp Ala Arg Ala Ala Ile Tyr Phe Val Lys Asn Asn Gly Phe		320
	325	330
Lys Ala Val Arg Cys Gly Ile Ala Lys Ser Gly Asp Ala Tyr Asn Gly		335
	340	345
Phe Thr Arg Pro Asn Val His Glu Asp Asp Pro Leu Tyr Trp Met Lys		350
	355	360
Ala Ser Glu Val Cys Phe Leu Lys Ala Glu Gly Ala Leu Ala Gly Phe		365
	370	375
Asp Met Gly Gly Ser Ala Gly Asp Phe Tyr Asn Ala Gly Ile Arg Met		380
385	390	395
Ser Phe Ser Glu Asn Gly Leu Asp Asn Ser Ser Ala Glu Thr Tyr Leu		400
	405	410
Lys Asp Ser Thr Arg Lys Pro Ala Asn Tyr Thr Asp Thr Ser Asn Gly		415
	420	425
Glu Leu Ser Ala Asn Ala Pro Ser Ser Ile Thr Ile Arg Trp Glu Asn		430
	435	440
Gly Ala Thr Glu Glu Glu Lys Leu Glu Arg Ile Ile Thr Gln Lys Tyr		445
	450	455
Leu Ala Ile Phe Pro Asn Gly Gln Glu Ala Trp Thr Glu Trp Arg Arg		460
465	470	475
Thr Gly Tyr Pro Arg Gln Ile Val Val Ala Glu Asn Lys Thr Asn Ser		480
	485	490
Ala Val Leu Ile Gly Asn Gly Tyr Asp Leu Gly Gly Val Arg Arg Leu		495
	500	505
Pro Tyr Pro Arg Thr Glu Tyr Glu Gln Asn Gly Glu Asn Leu His Asn		510
	515	520
Ala Ile Ser Gln Tyr Leu Gly Gly Val Asp Asn Ala Ala Pro Lys Val		525
	530	535
Trp Trp Asp Lys Lys Ser Lys		540
545	550	

&lt;210&gt; 8768

&lt;211&gt; 226

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8768

Glu Glu Lys Met Glu Lys Arg Phe Met Gln Ser Val Ala Met Arg Ile		
1	5	10
Ile Tyr Lys Gly Val Phe His Trp Phe Leu Lys Leu Ile Val Gly Val		15
	20	25
Gln Phe Thr Asp Cys Gln Phe Leu Lys Lys Glu Lys Gln Phe Ile Ile		30
	35	40
Leu Ala Asn His Asn Ser His Leu Asp Thr Leu Ser Leu Leu Ser Ser		45
	50	55
Leu Pro Gly Asn Leu Leu Trp Lys Val Lys Pro Val Ala Ala Glu Asp		60

65 70 75 80  
 Tyr Phe Gly Lys Thr Arg Phe Gln Ala Ser Ile Ser Asn Phe Phe Ile  
 85 90 95  
 Asn Thr Leu Leu Ile Arg Arg Lys Gly Glu Lys Asp Ser Glu His Asp  
 100 105 110  
 Pro Ile Arg Lys Met Leu Glu Ala Ile Asp Ala Gly Tyr Ser Leu Ile  
 115 120 125  
 Leu Phe Pro Glu Gly Thr Arg Gly Lys Ser Glu Gln Met Gly Lys Ile  
 130 135 140  
 Lys Ser Gly Ile Ala Arg Ile Leu Ser Leu Arg Pro Glu Val Lys Tyr  
 145 150 155 160  
 Ile Pro Val Phe Met Thr Gly Met Gly Arg Ser Leu Pro Lys Gly Lys  
 165 170 175  
 Met Ile Leu Leu Pro Tyr Lys Ala Ser Val Tyr Tyr Gly Ile Pro Thr  
 180 185 190  
 Leu Val Lys Ser Thr Asp Thr His Glu Ile Leu Asp Gln Ile Thr Gly  
 195 200 205  
 Asp Phe Glu Val Met Lys Glu Lys Tyr Gln Val Val Ile Asp Glu Glu  
 210 215 220  
 Glu Glu  
 225

<210> 8769  
 <211> 76  
 <212> PRT  
 <213> B.fragilis

<400> 8769  
 Ser Phe Ser Val Phe Arg Cys Leu Tyr Ser Phe Ser Thr Arg Val Leu  
 1 5 10 15  
 Pro Tyr Arg Gln Pro Pro Phe Phe Ser Thr Leu Gln Arg Ser Val Phe  
 20 25 30  
 Gly Thr Val Arg Glu Met Ala Ile Gln Pro Asp Asn Leu Ala Ile Leu  
 35 40 45  
 Pro Asp Tyr Thr Lys Thr Ser Ile Phe Ile Pro Glu Arg Asp Arg Tyr  
 50 55 60  
 Arg Lys Lys Ala Gly Ala Gly Thr Pro Ile Tyr Ile  
 65 70 75

<210> 8770  
 <211> 532  
 <212> PRT  
 <213> B.fragilis

<400> 8770  
 Val Ala Asp Phe Ser Ile Ser Asp Asp Leu Ala Ala Lys Val Thr Leu  
 1 5 10 15  
 Val Pro Ile Glu Gly Tyr Tyr Asp Lys Gly Lys Ser Arg Gln Asn Gln  
 20 25 30  
 Ala Glu Ala Gln Ala Val Val Asp Glu Ile Val Arg Arg Leu Ser Asp  
 35 40 45  
 Pro Glu Leu Arg Asn Gln Ser Ile Gly Val Val Thr Phe Ser Ser Val  
 50 55 60  
 Gln Gln Thr Leu Ile Glu Asp Met Leu Ser Asp Val Val Leu Gln Asn  
 65 70 75 80  
 Ala Glu Leu Glu Asn Leu Ala Phe Asn Arg Glu Glu Pro Val Phe Ile  
 85 90 95  
 Lys Asn Leu Glu Asn Val Gln Gly Asp Glu Arg Asp Val Ile Leu Phe  
 100 105 110

Ser Val Gly Tyr Gly Pro Asp Val Asn Gly Arg Val Ser Leu Asn Phe  
 115 120 125  
 Gly Pro Leu Asn Arg Asp Gly Gly Glu Arg Arg Leu Asn Val Ala Val  
 130 135 140  
 Ser Arg Ala Arg Tyr Glu Met Lys Val Phe Ser Thr Leu Arg Ala Asp  
 145 150 155 160  
 Gln Ile Asp Leu Lys Lys Thr Ser Ser Ile Gly Val Ala Gly Leu Lys  
 165 170 175  
 Tyr Phe Leu Glu Tyr Ala Gly Lys Gly Thr Gly Val Leu Asn His Ser  
 180 185 190  
 Tyr Val Ala Val Ser Glu Glu Val Glu Met Gly Glu Leu Ile Ala Ala  
 195 200 205  
 Ala Leu Arg Glu Lys Gly His Gln Val Lys Thr Lys Ile Gly Cys Ser  
 210 215 220  
 Gly Phe Lys Val Asp Val Gly Ile Ile Asp Pro Asn Asp Thr Ser Arg  
 225 230 235 240  
 Tyr Met Leu Gly Ile Leu Cys Asp Gly Glu Asn Tyr Arg Ala Ala Lys  
 245 250 255  
 Thr Ala Arg Asp Arg Glu Ile Val Gln Asp Ser Val Leu Lys Met Leu  
 260 265 270  
 Gly Trp Asn Ile Cys Lys Val Trp Thr Leu Asp Trp Trp Glu Asp Ser  
 275 280 285  
 Gln Lys Val Ile Asp His Ile Glu Ala Glu Leu Lys Arg Ala Glu Cys  
 290 295 300  
 Gly Lys Ser Gln Arg Ser Val Pro Val Ile Ser Leu Ala Ser Gly Ser  
 305 310 315 320  
 Gly Glu Val Gln Lys Glu Gly Leu Leu Cys His Ala Gln His Cys Leu  
 325 330 335  
 Val Lys Leu Pro Glu Gln Val Ile Arg Glu Glu Val Lys Thr Ala Ser  
 340 345 350  
 Pro Glu Ile Tyr Glu Lys Thr Leu Leu Asn Ser Val Asn Val Ser Ala  
 355 360 365  
 Trp Glu Leu Met Met Pro Arg Arg Glu Pro Arg Ile Arg Lys Gln Leu  
 370 375 380  
 Asn Glu Ile Met Arg Thr Glu Ala Pro Ile Ser Arg Ser Leu Leu Ser  
 385 390 395 400  
 Ser Arg Ile Phe Asn Ala Tyr Gly Ile Leu Arg Lys Thr Ala Arg Leu  
 405 410 415  
 Ile Glu Trp Met Asp Gly Ile Leu Asp Lys Thr Pro Tyr Tyr Lys Gln  
 420 425 430  
 Glu Ile Asp Gly Leu Val Phe Tyr Trp Asn Thr Lys Glu Glu Ala Asp  
 435 440 445  
 Ser Tyr Thr Gly Phe Arg Ile Asp Ser Lys Arg Glu Ala Val Asp Leu  
 450 455 460  
 Pro Pro Arg Glu Val Ala Asn Ala Ala Arg Asn Ile Leu Glu Gln Gln  
 465 470 475 480  
 Val Ala Leu Pro Leu Val Asp Leu Met Arg Val Thr Ala Gln Leu Leu  
 485 490 495  
 Gly Tyr Ala Arg Phe Gly Leu Asn Val Glu Thr Ala Met Arg Arg Gly  
 500 505 510  
 Val Gln Ile Leu Leu Asp Gly Glu Glu Val Lys Ile Glu Gly Gly Lys  
 515 520 525  
 Ile Leu Met Lys  
 530

&lt;210&gt; 8771

&lt;211&gt; 69

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8771

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Ile Asp Gly Val Leu Leu Lys Arg Glu Lys Ser Phe Leu Ser Asp Leu
1          5          10          15
Lys Ile Gly Ile Ser Ser Ser Ile Cys Val Arg Ala Ile Lys Val Ser
          20          25          30
Leu Phe Tyr Glu Lys Leu Val Asp Ile Ile Ile Leu Leu Leu Ser Ile
          35          40          45
Lys Val Gly Ile Pro Leu Val Asp Phe Cys Phe His Trp Leu Tyr Leu
          50          55          60
Arg Val Ser Lys Ile
65

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&lt;210&gt; 8772

&lt;211&gt; 614

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8772

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Asn Asn Glu Val Met Lys Thr Asn Gln Phe Arg Ala Met Val Phe Ala
1          5          10          15
Leu Leu Met Ala Val Ile Ser Leu Ala Thr Val Ser Ala Gln Ala Ile
          20          25          30
Thr Val Ser Gly Thr Val Thr Asp Ala Lys Asp Gly Thr Pro Leu Val
          35          40          45
Gly Cys Ser Val Gln Ile Lys Gly Thr Thr Lys Gly Thr Val Thr Asn
          50          55          60
Met Asn Gly Gln Tyr Thr Ile Gln Ser Lys Lys Gly Glu Thr Leu Leu
65          70          75          80
Phe Gln Tyr Ile Gly Tyr Lys Gln Glu Lys Arg Val Val Lys Ser Ser
          85          90          95
Thr Leu Asp Val Lys Met Lys Ala Asp Glu Leu Val Leu Glu Glu Cys
          100          105          110
Val Val Val Gly Tyr Gly His Glu Leu Arg Ala Thr Lys Ser Met Ser
          115          120          125
Thr Ala Tyr Met Ala Val Cys Pro Ala Ser Gly Ile Met Tyr Asn Ala
          130          135          140
Val Asn Ala Glu Glu Tyr Gly Glu Ile Gln Glu Asn Gly Phe Lys Asn
145          150          155          160
Val Ser Asp Ala Pro Leu Ser Thr Phe Ser Ile Asp Val Asp Ala Ala
          165          170          175
Ser Tyr Ser Asn Met Arg Arg Phe Ile Asn Lys Gly Lys Leu Pro Pro
          180          185          190
Val Asp Ala Ile Arg Thr Glu Glu Leu Val Asn Tyr Phe Ser Tyr Asp
          195          200          205
Tyr Pro Lys Pro Thr Gly Ser Asp Pro Val Lys Ile Thr Met Glu Ala
          210          215          220
Gly Thr Cys Pro Trp Asn Ala Asp His Arg Leu Val Arg Ile Gly Leu
225          230          235          240
Lys Ala Lys Glu Ile Pro Thr Asp Asn Leu Pro Ala Ser Asn Leu Val
          245          250          255
Phe Leu Ile Asp Val Ser Gly Ser Met Trp Gly Ala Asn Arg Leu Asp
          260          265          270
Leu Val Lys Ser Ser Leu Lys Leu Leu Val Asn Asn Leu Arg Asp Lys
          275          280          285
Asp Lys Val Ala Ile Val Thr Tyr Ala Gly Asn Ala Gly Val Lys Leu
          290          295          300
Glu Ala Thr Pro Gly Ser Asp Lys Gln Lys Ile Arg Glu Ala Ile Asp
305          310          315          320

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Glu Leu Glu Ala Ser Gly Ser Thr Ala Gly Gly Glu Gly Ile Met Leu  
 325 330 335  
 Ala Tyr Lys Ile Ala Gln Lys Asn Phe Ile Ser Gly Gly Asn Asn Arg  
 340 345 350  
 Ile Ile Leu Cys Thr Asp Gly Asp Phe Asn Val Gly Val Ser Ser Asp  
 355 360 365  
 Lys Glu Leu Glu Lys Leu Ile Glu Gln Lys Arg Lys Ser Gly Ile Phe  
 370 375 380  
 Leu Thr Val Leu Gly Tyr Gly Met Gly Asn Tyr Lys Asp Ser Lys Met  
 385 390 395 400  
 Gln Thr Leu Ala Glu Lys Gly Asn Gly Asn His Ala Tyr Ile Asp Asn  
 405 410 415  
 Leu Gln Glu Ala Asn Arg Val Leu Val Asn Glu Phe Gly Ala Thr Leu  
 420 425 430  
 His Thr Val Ala Lys Asp Val Lys Leu Gln Val Glu Phe Asn Pro Ala  
 435 440 445  
 Gln Val Gln Ala Tyr Arg Leu Ile Gly Tyr Glu Ser Arg Leu Leu Ala  
 450 455 460  
 Asp Glu Asp Phe Asn Asn Asp Thr Lys Asp Ala Gly Glu Met Gly Ala  
 465 470 475 480  
 Gly His Thr Val Thr Ala Phe Tyr Glu Val Ile Pro Thr Gly Val Lys  
 485 490 495  
 Ser Asp Phe Ala Gly Lys Ile Asp Asp Leu Lys Tyr Gln Lys Lys Gln  
 500 505 510  
 Lys Pro Ser Thr Pro Leu Asn Glu Ser Asp Glu Leu Leu Thr Ile Lys  
 515 520 525  
 Leu Arg Tyr Lys Ala Pro Asp Ser Asn Thr Ser Lys Lys Ile Glu Leu  
 530 535 540  
 Pro Leu Ile Asp His Lys Ser Asn Arg Val Ser Ala Asp Phe Arg Phe  
 545 550 555 560  
 Ala Ala Ala Val Ala Met Phe Gly Gln Leu Leu Arg Asp Ser Glu Phe  
 565 570 575  
 Lys Gly Asn Ala Thr Tyr Asp Lys Val Ile Ser Leu Ala Lys Thr Gly  
 580 585 590  
 Leu Glu Asn Asp Glu Lys Gly Tyr Lys Arg Glu Phe Ile Arg Leu Ala  
 595 600 605  
 Glu Thr Ala Lys Ser Leu  
 610

&lt;210&gt; 8773

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8773

Lys Leu Leu Val Arg Asn Val Glu Phe Ile Lys Thr Arg Glu Arg Ala  
 1 5 10 15  
 Phe Phe Leu Leu Asn Pro Ile Val Lys Ser Ser Ser Lys Leu Glu Gly  
 20 25 30  
 Met Lys Lys Tyr Leu Ala Ile Glu Ile Arg Gly Glu Ile Phe Val Met  
 35 40 45  
 Asn Asp Asn Asp Glu Leu Gly Gly Leu Ile Asp Asn Asp Val Pro Phe  
 50 55 60  
 Thr Val Ile Gly His Val Cys Thr Glu Glu Cys Asn Thr Thr Cys Leu  
 65 70 75 80  
 His Tyr Arg Gln Gly Thr Cys Pro Cys Lys Ile Met Lys Asp Thr Phe  
 85 90 95  
 Gly Lys Val Ile His Val Phe Val  
 100

<210> 8774  
 <211> 191  
 <212> PRT  
 <213> B.fragilis

<400> 8774

Met Leu Phe Phe Lys Arg Asn Ile Ser Arg Leu Ser Asp Glu Glu Leu  
 1 5 10 15  
 Leu Ile His Tyr Thr Lys Ser Gly Asp Thr Glu Tyr Phe Gly Glu Leu  
 20 25 30  
 Tyr Asn Arg Tyr Ile Pro Leu Leu Tyr Gly Leu Cys Leu Lys Tyr Leu  
 35 40 45  
 His Asp Glu Asp Arg Ala Gln Glu Ala Val Met Gln Leu Phe Glu Asp  
 50 55 60  
 Leu Leu Pro Lys Leu Gly Asn Tyr Glu Ile Lys Val Phe Lys Pro Trp  
 65 70 75 80  
 Leu Tyr Arg Val Ala Lys Asn His Cys Leu Gln Leu Leu Arg Lys Glu  
 85 90 95  
 Asn Lys Glu Ile Pro Leu Asp Tyr Thr Val Asn Ile Met Glu Ser Asp  
 100 105 110  
 Glu Phe Leu His Leu Leu Ser Glu Glu Ser Ser Glu Glu Gln Leu  
 115 120 125  
 Lys Ala Leu His His Cys Leu Glu Lys Leu Pro Glu Glu Gln Arg Thr  
 130 135 140  
 Ser Ile Thr Arg Phe Phe Leu Glu Glu Met Ser Tyr Ala Asp Ile Val  
 145 150 155 160  
 Glu Gln Thr Gly Phe Thr Leu Asn Asn Val Lys Ser Tyr Ile Gln Asn  
 165 170 175  
 Gly Lys Arg Asn Leu Lys Ile Cys Ile Lys Asn Gln Leu Lys Gly  
 180 185 190

<210> 8775  
 <211> 107  
 <212> PRT  
 <213> B.fragilis

<400> 8775

Ser Ala Ser Ser Leu Asn Phe Phe Ser Thr Ile Asn Ala Tyr Phe Ile  
 1 5 10 15  
 Ala Ser Val Ser Ser Ala Pro Gly Leu Asn Leu Ala Thr Phe Phe Ala  
 20 25 30  
 Gly Ile Ser Ile Ala Phe Leu Val Glu Gly Leu Ile Pro Ile Leu Ala  
 35 40 45  
 Asp Leu Ser Ala Thr Glu Asn Val Pro Asn Pro Thr Lys Glu Ile Leu  
 50 55 60  
 Ser Pro Ala Asp Lys Ala Phe Val Thr Glu Glu Lys Lys Ala Ser Ser  
 65 70 75 80  
 Ala Phe Leu Glu Ser Thr Leu Leu Lys Pro Asp Ser Ala Ala Ile Ala  
 85 90 95  
 Leu Ile Ser Ser Ala Leu Phe Ile Ile Arg Lys  
 100 105

<210> 8776  
 <211> 577  
 <212> PRT  
 <213> B.fragilis

<400> 8776

Cys Pro Leu Pro Phe Ser Ser Phe Pro Phe Ser Phe Ser Thr Phe Ala  
 1 5 10 15  
 Ile Asp Leu Phe Ile Asn Thr Gln Thr Met Lys Ser Leu His Ser Leu  
 20 25 30  
 Leu Phe Cys Gly Val Leu Leu Leu His Ala Ser Cys Ser Gly Ile Lys  
 35 40 45  
 Thr Ser Asp Glu Lys Ser Leu Gly Asp Cys Pro Leu Val Ala Thr Trp  
 50 55 60  
 Lys Gln Ala Gly Thr Asp Ser Ile Val Val Leu Asp Val Gly Leu Ile  
 65 70 75 80  
 Lys Asp Thr Met Gln Ile Arg Leu Ser Gln Leu Val Asp Asp Leu Glu  
 85 90 95  
 Ile Ile Lys Leu Glu Thr Arg Asp Thr Ala Leu Val Lys Ser Gly Tyr  
 100 105 110  
 Met Ala Val Ser Asp Arg Tyr Met Leu Leu Gly Ser Tyr Leu Met Pro  
 115 120 125  
 Cys Lys Leu Phe Asp Lys Asn Gly Thr Phe Leu Arg Gln Ile Gly Gly  
 130 135 140  
 Leu Gly Gln Gly Pro Gly Glu Tyr Thr Asn Ile Tyr Asp Ala Gln Ile  
 145 150 155 160  
 Asp Glu Val Asn Asn Arg Ile Tyr Met Leu Pro Trp Thr Ser Asn Gln  
 165 170 175  
 Leu Leu Val Phe Asp Leu Asp Gly Asn Ile Leu Pro Pro Ile Pro Leu  
 180 185 190  
 Pro Ala Arg Val Pro Lys Gly Val Phe Arg Val Asp Thr Lys Lys Asn  
 195 200 205  
 Leu Leu Thr Met Gly Ile Leu Pro Phe Gln Asp Leu Glu Asn Lys Phe  
 210 215 220  
 Val Leu Trp Gln Gln Asp Leu Lys Gly Asn Val Leu Gln Ser Ile Ser  
 225 230 235 240  
 Ser Thr Pro Tyr Tyr Thr Tyr Asp Asp Tyr Ser Asn Glu Val Ser Ser  
 245 250 255  
 Asn Arg Asn Ala Gly Ser Phe Asp Phe Phe Ile Phe Asn Trp Ser Ala  
 260 265 270  
 Val Gln Asp Ser Leu Tyr His Tyr Asp Ala Lys Glu Asn Arg Leu Val  
 275 280 285  
 Pro Val Phe Thr Ala Asn Phe Gly Thr Gln Asp Ile Pro Lys His Thr  
 290 295 300  
 Tyr Thr Glu Phe Pro Gly His Tyr Trp Val Asn Ile Ile Thr Glu Val  
 305 310 315 320  
 Val Asn Gly Gln Gly Met Pro Pro Met Asn Val Leu Ile Asp Lys His  
 325 330 335  
 Ser Leu Lys Gly Thr Tyr Cys Thr Leu Val Ile Asp Glu Leu Gly Gly  
 340 345 350  
 Ile Pro Val Glu Tyr Pro Tyr Asp Cys Phe Gln Asp Gly Arg Phe Leu  
 355 360 365  
 Met Asn Leu Asp Pro Gly Asp Leu Ile Asp Glu Leu Glu Lys Val Leu  
 370 375 380  
 Ala Arg Pro Glu Arg Phe Ser Lys Glu Glu Ser Asp Arg Leu Thr Lys  
 385 390 395 400  
 Leu Lys Asn Ser Ile Ser Val Asp Asp Asn Asn Tyr Ile Leu Val Gly  
 405 410 415  
 Lys Phe Lys Ser Lys Gly Glu Ser Leu Ile Leu Ser Ala Asn Pro Val  
 420 425 430  
 Gln Lys Ile Thr Glu Gln Glu Gln Gln Pro Ala Lys Glu Glu Pro Val  
 435 440 445  
 Lys Thr Ala Val Gln Ser Glu Val Ala Ser Glu Ala Asp Thr Val Trp  
 450 455 460  
 Ser Val Ser Pro Tyr Ser Ala Ile Leu Pro Asp Ala Ile Asp Tyr Phe



465                      470                      475                      480  
 Arg Thr His Asn Lys Tyr Lys Asp Trp Asp Pro Lys Lys Gly Lys Arg  
                                  485                      490                      495  
 Val Leu Val Arg Gly Ile Ala Glu Lys Asp Gly Thr Ile Thr Gly Val  
                                  500                      505                      510  
 Gly Ile Ser Tyr Gly Trp Asp Leu Asp Pro Gln Ser Gly Ala Met Lys  
                                  515                      520                      525  
 Asn Lys Ser Glu Gly Thr Cys Gly Leu Lys Glu Leu Asp Glu Glu Ala  
                                  530                      535                      540  
 Leu Arg Leu Ile Arg Gln Ala Lys Leu Leu Pro Gly Met Thr Asp Lys  
 545                      550                      555                      560  
 Lys Ile Pro Val Arg Ser Lys Phe Val Ile Val Val Asp Phe Pro Pro  
                                  565                      570                      575  
 Lys

<210> 8777  
 <211> 64  
 <212> PRT  
 <213> B.fragilis

<400> 8777  
 Leu Arg Pro Leu Arg Leu Phe Pro Lys Ala Arg Lys Gly Arg Ile Val  
 1                      5                      10                      15  
 Leu Leu Phe Met Ile His Gln Pro Cys Lys Gln Lys Asp Arg Lys Lys  
                                  20                      25                      30  
 Thr Asp Pro Leu Thr Arg Leu Tyr Lys Lys Asn Ala Gln Pro Glu Ala  
                                  35                      40                      45  
 Glu Gln Glu Glu Asn Arg Val Ile Glu Gly Ser Lys Pro Gly Ile Lys  
                                  50                      55                      60

<210> 8778  
 <211> 161  
 <212> PRT  
 <213> B.fragilis

<400> 8778  
 Leu Val Phe Thr Lys Arg Met Pro Asn Arg Arg Pro Asn Arg Lys Lys  
 1                      5                      10                      15  
 Thr Gly Ser Leu Lys Gly Gln Ser Arg Gly Leu Ser Lys Asn Lys Ser  
                                  20                      25                      30  
 Gly Phe Asp Thr Lys Ser Leu Phe Val Phe Arg Lys Arg Ser Lys His  
                                  35                      40                      45  
 Phe Leu Gln Lys Thr Val Thr Phe Ser Lys Asn Ala Tyr Phe Phe Ala  
                                  50                      55                      60  
 Leu Thr Ser Pro Tyr Val Leu Lys Thr Thr Phe Thr Ala Pro Glu Asn  
 65                      70                      75                      80  
 Thr Thr Tyr Ser Gly Ser Ser Cys Ser Asn Arg Leu Leu Ser Glu Ser  
                                  85                      90                      95  
 Pro Thr Gly Val Ser Lys Ser Leu Lys Phe Pro Ser Leu Lys Ser Thr  
                                  100                      105                      110  
 Gly Asn Ile Tyr Phe Gln Ile Ala Phe Phe Leu Thr Glu Asn Lys Ser  
                                  115                      120                      125  
 Arg Thr Lys Gln Asn Asp Lys Pro Gly Asn Glu Ile Glu Thr Phe Phe  
                                  130                      135                      140  
 Arg Pro Arg Leu Ser Arg Glu Ser Lys Lys Arg Lys Leu Gly Gly Phe  
 145                      150                      155                      160  
 Ile

<210> 8779  
 <211> 400  
 <212> PRT  
 <213> B.fragilis

<400> 8779

Gly	Ile	Asp	Thr	Leu	Leu	Met	Asn	Pro	Lys	Leu	Cys	Cys	Lys	Met	Thr
1				5					10					15	
Lys	Thr	Thr	Asn	Met	Lys	Gln	Asn	Thr	Phe	Phe	Val	Asn	Val	Trp	Thr
			20					25					30		
Leu	Met	Leu	Ile	Leu	Gly	Leu	Ile	Ala	Cys	Gly	Glu	Lys	Lys	Thr	Gln
			35				40					45			
Val	Lys	Thr	Glu	Leu	Gln	Arg	Ile	Glu	Ala	Phe	Ala	Phe	Asp	Val	Asn
	50				55						60				
Asp	Asp	Tyr	Leu	Gln	Ser	Tyr	Ala	Gly	Thr	Phe	Cys	Tyr	Ser	Thr	Ser
65					70					75					80
Ala	Arg	Ile	Asp	Gly	Lys	Glu	Cys	Leu	Ile	Val	Tyr	Asn	Gly	Lys	Leu
				85					90					95	
His	Ser	Ile	Asp	Ile	Leu	Asn	Leu	Ala	Asp	Arg	Arg	Pro	Leu	Lys	Gln
			100					105					110		
Ile	Ala	Leu	Ala	Lys	Asp	Gly	Pro	Asp	Gln	Ile	Leu	Ala	Pro	Lys	Gly
			115				120						125		
Ile	Gly	Tyr	Tyr	Lys	Asp	Ser	Phe	Ile	Ile	Leu	Asn	Thr	Gly	Gly	Leu
	130					135						140			
Tyr	Arg	Val	Gly	Gln	Asp	Gly	Lys	Val	Val	Ser	Lys	Lys	Leu	Leu	Asn
145					150					155					160
Asp	Phe	Pro	Gln	Ile	Lys	Glu	Glu	Gly	Tyr	Gly	Ile	Ala	Val	Pro	Asp
				165					170					175	
Leu	Thr	Val	Tyr	Phe	Ser	Val	Tyr	Ser	Phe	Phe	Gly	Phe	Asp	Ala	Ala
			180					185					190		
Asn	Gly	Arg	Val	Ala	Leu	Pro	Leu	Tyr	Phe	Tyr	Glu	Lys	Asp	Thr	Thr
			195				200						205		
Gly	Glu	Tyr	Pro	Lys	Lys	Val	Leu	Ile	Val	Ser	Cys	Asp	Asp	Trp	Asn
	210					215						220			
Ile	Arg	Asp	Glu	Val	Glu	Ile	His	Cys	Pro	Asp	Val	Ile	Arg	Lys	Glu
225					230					235					240
Gly	Asp	Met	Gln	Leu	Gly	Cys	Val	Asn	Val	Leu	Pro	Tyr	Gly	Asp	
				245					250					255	
Trp	Leu	Ile	Tyr	Asn	Phe	Pro	Ala	Ser	Ser	Lys	Val	Tyr	Val	Tyr	Asp
			260					265						270	
Leu	Ser	Val	Lys	Lys	Ser	Lys	Glu	Tyr	Asp	Phe	Pro	Ser	Thr	Phe	Thr
			275				280						285		
Asp	Pro	Phe	Phe	His	Leu	Pro	Asp	Ile	Asn	Gly	Ser	Glu	Pro	Gly	Phe
	290					295					300				
Gly	Cys	Leu	Lys	Thr	Gly	Tyr	Tyr	Phe	Pro	Leu	Cys	Tyr	Asp	Ala	Tyr
305					310					315					320
His	Asn	Val	Phe	Trp	Arg	Ile	Gln	His	Gly	Pro	Leu	Asp	Gly	His	Gly
				325					330					335	
Val	Gly	Gly	Lys	Pro	Phe	Ser	Val	Met	Cys	Ile	Ser	Pro	Asp	Phe	Leu
			340					345					350		
Asn	Ser	Ala	Glu	Tyr	Val	Ile	Pro	Ala	Gly	Ala	Ser	Ile	Tyr	Pro	Asp
		355					360						365		
Leu	Ala	Phe	Thr	Asp	Ser	Leu	Ile	Leu	Leu	Pro	Tyr	Thr	Gly	Gly	Asp
	370					375					380				
Lys	Ile	Gly	Glu	Asn	Asn	Met	Cys	Phe	Tyr	Gly	Leu	Gln	Tyr	Arg	Glu
385					390					395					400

<210> 8780

<211> 107  
 <212> PRT  
 <213> B.fragilis

<400> 8780

Asn	Val	Tyr	Leu	Ile	Ile	Asp	Lys	Lys	Leu	Asn	Met	Lys	Lys	Ile	Asp
1			5						10					15	
Leu	Ile	Arg	Ser	Ile	Ala	Val	Lys	Ser	Asn	Leu	Lys	Lys	Glu	His	Ile
		20						25					30		
Ala	Ile	Val	Val	Glu	Gly	Val	Met	Glu	Ala	Ile	Ala	Glu	Ala	Leu	His
		35					40					45			
Gln	Gly	Glu	Ser	Val	Thr	Leu	Val	Gly	Phe	Gly	Thr	Phe	Glu	Val	Lys
	50					55					60				
Glu	Arg	Lys	Ala	Arg	Lys	Gly	Tyr	Asn	Leu	Ser	Thr	Gly	Glu	Ile	Met
65					70					75					80
Thr	Ile	Pro	Gly	Lys	Lys	Thr	Val	Arg	Phe	Lys	Pro	Gly	Ala	Lys	Met
				85					90					95	
Asn	Leu	Glu	Thr	Lys	His	Gln	Asp	Thr	Ser	Arg					
			100					105							

<210> 8781  
 <211> 612  
 <212> PRT  
 <213> B.fragilis

<400> 8781

Arg	Leu	Leu	Phe	Leu	Tyr	Leu	Cys	Ala	Gln	Asn	Asn	Asn	Leu	Asp	Met
1			5						10					15	
Lys	Ile	Glu	Asp	Lys	Leu	Val	Thr	Ser	Val	Ile	Ser	Gly	Leu	Lys	Ala
			20					25					30		
Leu	Tyr	Gly	Gln	Asp	Val	Pro	Ala	Ala	Gln	Val	Gln	Leu	Gln	Lys	Thr
		35					40					45			
Lys	Lys	Glu	Phe	Glu	Gly	His	Leu	Thr	Leu	Val	Val	Phe	Pro	Phe	Leu
	50					55					60				
Lys	Met	Ser	Lys	Lys	Gly	Pro	Glu	Gln	Thr	Ala	Gln	Glu	Ile	Gly	Glu
65					70					75					80
Tyr	Leu	Lys	Ala	Asn	Glu	Pro	Ala	Val	Ala	Ala	Phe	Asn	Val	Ile	Lys
				85					90					95	
Gly	Phe	Leu	Asn	Leu	Thr	Val	Ala	Ser	Ala	Thr	Trp	Ile	Glu	Leu	Leu
			100				105						110		
Asn	Glu	Ile	His	Ala	Asp	Ala	Gln	Tyr	Gly	Ile	Val	Ser	Ala	Asp	Glu
		115					120					125			
Asn	Ala	Pro	Leu	Val	Met	Ile	Glu	Tyr	Ser	Ser	Pro	Asn	Thr	Asn	Lys
	130					135					140				
Pro	Leu	His	Leu	Gly	His	Val	Arg	Asn	Asn	Leu	Leu	Gly	Asn	Ala	Leu
145					150					155					160
Ala	Asn	Ile	Val	Met	Ala	Asn	Gly	Asn	Lys	Val	Val	Lys	Thr	Asn	Ile
				165					170					175	
Val	Asn	Asp	Arg	Gly	Ile	His	Ile	Cys	Lys	Ser	Met	Leu	Ala	Trp	Gln
			180					185					190		
Lys	Tyr	Gly	Lys	Gly	Glu	Thr	Pro	Glu	Ser	Ser	Gly	Lys	Lys	Gly	Asp
		195				200					205				
His	Leu	Val	Gly	Asp	Tyr	Tyr	Val	Ala	Phe	Asp	Lys	His	Tyr	Lys	Ala
	210					215				220					
Glu	Val	Ala	Glu	Leu	Met	Glu	Lys	Gly	Met	Ser	Lys	Glu	Glu	Ala	Glu
225					230					235					240
Ala	Ala	Ser	Pro	Leu	Met	Asn	Glu	Ala	Arg	Glu	Met	Leu	Val	Lys	Trp
				245					250					255	
Glu	Ala	Gly	Asp	Pro	Glu	Val	Arg	Ala	Leu	Trp	Gln	Met	Met	Asn	Asn

260 265 270  
 Trp Val Tyr Ala Gly Phe Asp Glu Thr Tyr Arg Lys Met Gly Val Gly  
 275 280 285  
 Phe Asp Lys Ile Tyr Tyr Glu Ser Asn Thr Tyr Leu Glu Gly Lys Glu  
 290 295 300  
 Lys Val Met Glu Gly Leu Glu Lys Gly Phe Phe Phe Lys Lys Glu Asp  
 305 310 315 320  
 Gly Ser Val Trp Ala Asp Leu Thr Ala Glu Gly Leu Asp His Lys Leu  
 325 330 335  
 Leu Leu Arg Gly Asp Gly Thr Ser Val Tyr Met Thr Gln Asp Ile Gly  
 340 345 350  
 Thr Ala Lys Leu Arg Phe Ala Asp Tyr Pro Ile Asp Lys Met Ile Tyr  
 355 360 365  
 Val Val Gly Asn Glu Gln Asn Tyr His Phe Gln Val Leu Ser Ile Leu  
 370 375 380  
 Leu Asp Lys Leu Gly Phe Glu Trp Gly Lys Ser Leu Val His Phe Ser  
 385 390 395 400  
 Tyr Gly Met Val Glu Leu Pro Glu Gly Lys Met Lys Ser Arg Glu Gly  
 405 410 415  
 Thr Val Val Asp Ala Asp Asp Leu Met Ala Glu Met Ile Ala Thr Ala  
 420 425 430  
 Lys Glu Thr Ser Gln Glu Leu Gly Lys Leu Asp Gly Leu Thr Gln Glu  
 435 440 445  
 Glu Ala Asp Asp Ile Ala Arg Ile Val Gly Leu Gly Ala Leu Lys Tyr  
 450 455 460  
 Phe Ile Leu Lys Val Asp Ala Arg Lys Asn Met Thr Phe Asn Pro Lys  
 465 470 475 480  
 Glu Ser Ile Asp Phe Asn Gly Asn Thr Gly Pro Phe Ile Gln Tyr Thr  
 485 490 495  
 Tyr Ala Arg Ile Arg Ser Val Leu Arg Lys Ala Ala Glu Ala Gly Ile  
 500 505 510  
 Val Ile Pro Glu Val Leu Pro Ala Asn Ile Glu Leu Ser Glu Lys Glu  
 515 520 525  
 Glu Gly Leu Ile Gln Met Val Ala Asp Phe Ala Ala Val Val Arg Gln  
 530 535 540  
 Ala Gly Glu Asp Tyr Ser Pro Ser Gly Ile Ala Asn Tyr Val Tyr Asp  
 545 550 555 560  
 Leu Val Lys Glu Tyr Asn Gln Phe Tyr His Asp Phe Ser Ile Leu Arg  
 565 570 575  
 Glu Glu Asn Glu Asp Val Lys Leu Phe Arg Ile Ala Leu Ser Ala Asn  
 580 585 590  
 Ile Ala Lys Val Val Arg Leu Gly Met Gly Leu Leu Gly Ile Glu Val  
 595 600 605  
 Pro Asp Arg Met  
 610

&lt;210&gt; 8782

&lt;211&gt; 450

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8782

Trp Gly Pro Tyr Ala Gln Thr Ile Asn Leu Asn Ser Ile Val Ala Met  
 1 5 10 15  
 Lys His Met Ser Leu Leu Leu Ile Gly Val Phe Val Leu Leu Gly Cys  
 20 25 30  
 Ser Ser Asn Lys Lys Gln Glu Pro Ile Ser Lys Ser Gly Ile Pro Val  
 35 40 45  
 Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu Ser

50	55	60
Glu Ala Ala Ser Lys Val Asp Ile Val Pro Leu Glu Val Thr Asp Glu		
65	70	75
Ser Leu Leu Gly Glu Ile Tyr His Leu Gln Ile Thr Glu Asn Asp Ile		80
	85	90
Trp Val His His Tyr Lys Asp Lys Cys Ile Cys Arg Phe Ser Arg Ser		95
	100	105
Gly Lys Phe Leu Asn Lys Val Gly Lys Ile Gly Gln Gly Pro Gly Glu		110
	115	120
Phe Ile Gln Leu Ser Asp Phe Phe Ile Asp Glu Lys His Arg Glu Ile		125
	130	135
Tyr Ile Val Ser Ala Ser Arg Gly Ile Phe Val Tyr Asp Phe Asp Gly		140
	145	150
Asn Phe Lys Arg Gln Pro Thr Arg Thr Ile Val Glu Thr Met Phe Gly		155
	160	165
Ser Ile Phe Asn Gln Phe Met Ile Tyr Asn Asn His Phe Phe Ile Leu		170
	175	180
Gln Asn Leu Pro Leu Tyr Arg Glu Ile Pro Lys Asp Ser Leu Trp Ser		185
	190	195
Leu Ala Leu Val Asp Ser Ser Tyr Lys Lys Lys Lys Ile Phe Lys Asn		200
	205	210
Pro Val His Ile Gly Lys Glu Asp Gln Ile Ile Glu Asn Arg Ile Gln		215
	220	225
Met Asn Tyr Met Phe Asn Tyr Trp Leu Glu Ser Ser Thr Asn Ile Asp		230
	235	240
Thr Tyr Asn Asn Gln Leu Thr Leu Lys Phe Pro Asp Thr Asp Thr Ile		245
	250	255
Tyr Ser Tyr Asp Ser Ile Lys Glu Glu Leu Val Pro Gln Tyr Ala Ile		260
	265	270
Trp Val Asp Glu Glu Lys Gly Asp Tyr Glu Tyr Thr His Leu Trp Phe		275
	280	285
Arg Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile His Ser Tyr Tyr Ser		290
	295	300
Thr Lys Glu Asn Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu Val Tyr		305
	310	315
Ile Tyr Cys Tyr Asn Lys Gln Glu Lys Asn Val Arg Leu Gln Lys Gln		320
	325	330
Gln Gly Glu Ile Thr Glu Arg Asp Val Ser Trp Phe Ser Ile Pro Phe		335
	340	345
Arg Arg Met Glu Cys Pro Phe Val Leu Ser Asn Asp Leu Cys Gly Gly		350
	355	360
Asp Phe Ile Ile Asp Phe Arg Ser Ser Gly Lys Tyr Trp Val Asp Val		365
	370	375
Leu Tyr Leu Gly Asn Asp Gly Asn Arg Val Asp Leu Asn Gln Ile Lys		380
	385	390
Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile Gln Val		395
	400	405
Leu Glu Ser Ala Thr Glu Asp Ser Asn Pro Val Leu Met Ile Ala Thr		410
	415	420
Leu Lys	425	430
450	435	440
	445	

&lt;210&gt; 8783

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8783

Thr Thr Val Tyr Lys His Asn Arg His Glu Ser His Asp Phe Asn Pro

1                      5                      10                      15  
 Lys Tyr Pro Asp Ser Tyr Lys Leu Val Ile Gln Val Asn Phe Thr Ile  
                          20                      25                      30  
 Ile Pro Thr Phe Ala Leu Tyr Ile His Gln Tyr Asn Ala Asn Gly Ser  
                          35                      40                      45  
 Ser Lys Asn Leu Leu Met Val His Ser Tyr Lys Arg Gln Tyr Leu Val  
                          50                      55                      60  
 Tyr Thr Phe Phe  
 65

<210> 8784

<211> 366

<212> PRT

<213> B.fragilis

<400> 8784

His Met Lys His Ile Gly Arg Leu Ala Leu Phe Leu Cys Leu Ala Val  
 1                      5                      10                      15  
 Asn Ala Phe Phe Ile Gly Met Leu Leu Leu Thr Ala Tyr Ser Pro Tyr  
                          20                      25                      30  
 Ile Asn Pro Glu Val His Pro Val Gln Ser Cys Leu Gly Leu Thr Phe  
                          35                      40                      45  
 Pro Ile Phe Leu Val Ile Asn Phe Cys Phe Leu Ile Phe Trp Leu Ile  
                          50                      55                      60  
 Val Arg Tyr Arg Phe Ala Leu Val Pro Leu Leu Gly Phe Leu Leu Cys  
 65                      70                      75                      80  
 Tyr Pro Gln Leu Arg Thr Tyr Met Pro Val Asn Pro Gly Thr Ala Gly  
                          85                      90                      95  
 Gln Pro Glu Asn Ser Ile Lys Leu Leu Ser Tyr Asn Ile Met Ser Phe  
                          100                      105                      110  
 Gly Asn Met Lys Lys Glu Asn Gly Gln Asn Pro Ile Leu Asn Tyr Ile  
                          115                      120                      125  
 Lys Asn Ser Asn Ala Asp Ile Val Cys Met Gln Glu Tyr Ala Gly Ser  
                          130                      135                      140  
 Glu Thr Ala Lys Ile His Leu Ser Asn Lys Glu Ile Arg Gln Ala Leu  
 145                      150                      155                      160  
 Lys Asp Tyr Pro Tyr His Asn Ile Lys Gln Val Gly Lys Thr Gly Ala  
                          165                      170                      175  
 Gly Ser Gln Leu Ala Cys Tyr Ser Lys Phe Pro Ile Leu Ser Ala Arg  
                          180                      185                      190  
 Met Leu Asp Tyr Arg Ser Asn Tyr Asn Gly Ser Met Val Tyr Glu Ile  
                          195                      200                      205  
 Lys Ile Gly Lys Asp Thr Val Leu Leu Ile Asn Asn His Leu Glu Ser  
                          210                      215                      220  
 Asn Lys Leu Thr Arg Glu Asp Lys Val Val Tyr Glu Asp Met Leu Lys  
 225                      230                      235                      240  
 Asp Pro Lys Ala Gly Lys Val Lys Ser Gly Val Arg Gln Leu Val Asn  
                          245                      250                      255  
 Lys Leu Ala Glu Ala Ser Ala Ile Arg Ser Ala Gln Ala Arg Thr Ile  
                          260                      265                      270  
 Ala Gln Glu Ile Ala His Ser Pro Tyr Pro Ser Val Ile Val Cys Gly  
                          275                      280                      285  
 Asp Phe Asn Asp Ser Pro Ile Ser Tyr Ala His Arg Val Ile Ser Gln  
                          290                      295                      300  
 Asp Met Asp Asp Ala Phe Thr Glu Ser Gly Cys Gly Leu Gly Ile Ser  
 305                      310                      315                      320  
 Tyr Asn Gln Asn Lys Phe Tyr Phe Arg Ile Asp Asn Ile Leu Val Ser  
                          325                      330                      335  
 Lys Asn Leu Lys Ala Ser Gly Cys Thr Val Asp Asn Ser Ile Lys Asp



<400> 8785

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<210> 8786
<211> 608
<212> PRT
<213> B.fragilis
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<400> 8786

Glu 1	Leu	Asn	Lys	Gly 5	Ser	Asp	Met	Gln	Ala 10	Ile	Ile	Leu	Ala	Ala 15	Gly
Met	Gly	Arg	Arg	Leu 20	Gly	Glu	Leu	Thr	Arg	Tyr	Asp	Thr	Lys	Cys	Met
Ile	Glu	Val	Asn	Gly 35	Ile	Arg	Ile	Ile	Asp	Arg	Leu	Leu	Ala	Asn	Leu
Ala	Val	Ala	Arg	Leu 50	Ser	Arg	Ile	Val	Leu	Val	Ile	Gly	Phe	Gln	Gly
Asp 65	Lys	Leu	Arg	Ala 70	Tyr	Leu	Gly	Asn	Glu	Tyr	Cys	Gly	Ile	Pro	Ile
Tyr	Tyr	Leu	Glu	Asn 85	Pro	Tyr	Tyr	Ala	His	Thr	Asn	Asn	Ile	Tyr	Ser
Leu	Phe	Leu	Ala	Arg 100	His	His	Leu	Ala	Ser	Asp	Asp	Thr	Leu	Leu	Leu
Glu	Ser	Asp	Ile	Val 115	Phe	Glu	Lys	Arg	Ile	Leu	Glu	Arg	Val	Leu	Glu
Glu	Pro	Tyr	Pro	Asn 130	Val	Ala	Val	Val	Asp	Arg	Tyr	Lys	Ser	Trp	Met
Asp 145	Gly	Thr	Met	Val 150	Thr	Val	Asp	Glu	Lys	Gln	Phe	Ile	Val	Asp	Phe
Val	Ser	Lys	His	Thr 165	Phe	Ser	Tyr	Glu	Lys	Thr	Ser	Thr	Tyr	Phe	Lys
Thr	Val	Asn	Ile	Tyr 180	Arg	Phe	Ser	Lys	Glu	Phe	Ser	Val	Gly	Lys	Tyr
Val	Pro	Phe	Leu	Glu 195	Ala	Tyr	Cys	Lys	Cys	Phe	Asp	Asn	Ser	Ala	Tyr
Tyr	Glu	Gln	Ile	Leu 210	Ala	Val	Leu	Ser	Leu	Leu	Asp	Lys	Ala	Gly	Leu
Lys 225	Ala	Leu	Pro	Leu 230	Glu	Gly	Glu	Lys	Trp	Tyr	Glu	Ile	Asp	Asp	Met

Gln Asp Leu Asp Ile Ala Glu Thr Leu Phe Gly Lys Lys Glu Gly Leu  
 245 250 255  
 Leu Pro Gly Tyr Gln Lys Arg Tyr Gly Gly Tyr Trp Arg Phe Pro Phe  
 260 265 270  
 Leu Leu Asp Phe Ala Tyr Leu Val Asn Pro His Phe Pro Thr Glu Arg  
 275 280 285  
 Met Leu Glu Glu Leu Lys Ala Asn Leu Asp Lys Leu Leu Arg Gln Tyr  
 290 295 300  
 Pro Ser Gly Ser Tyr Val Asn Arg Arg Leu Val Ala Lys His Trp Asn  
 305 310 315 320  
 Ile Pro Ala Glu Ala Val Ala Val Gly Asn Gly Ala Ala Glu Leu Ile  
 325 330 335  
 Arg Lys Leu Met Glu Leu Leu Pro Gly Arg Met Gly Val Ile Leu Pro  
 340 345 350  
 Thr Phe Glu Glu Tyr Leu Val Arg Asp Asp Arg Ile Glu Thr Phe Leu  
 355 360 365  
 Pro Leu Gly Pro Gly Tyr Arg Tyr Thr Val Ser Asp Leu Lys Ile Phe  
 370 375 380  
 Phe Glu Asp Lys Gly Val Thr Ser Leu Leu Leu Leu Asn Pro Asp Asn  
 385 390 395 400  
 Pro Ser Gly Asn Ser Ile Pro Tyr Glu Asp Leu Ile Ser Leu Ala Gly  
 405 410 415  
 Trp Thr Gln Glu Arg Ser Ile Arg Leu Ile Val Asp Glu Ser Phe Ile  
 420 425 430  
 Asp Phe Ser Glu Gly Gly Glu Glu Thr Ser Leu Ile Gly Asp Lys Ile  
 435 440 445  
 Leu Lys Glu Tyr Asn His Leu Val Val Ile Lys Ser Leu Ser Lys Ser  
 450 455 460  
 His Gly Ile Pro Gly Leu Arg Leu Gly Ile Ala Val Ser Gly Asp His  
 465 470 475 480  
 Lys Leu Met Asp Glu Leu Gln Gln Lys Leu Pro Val Trp Asn Ile Asn  
 485 490 495  
 Ser Leu Ala Glu Tyr Tyr Leu Gln Ile Leu Asp Lys Tyr Thr Ile Asp  
 500 505 510  
 Tyr Arg Gln Ala Cys Ala Arg Phe Arg Glu Glu Arg Thr Leu Phe Phe  
 515 520 525  
 Glu Glu Leu Gln Glu Val Gly Tyr Leu Ala Val Phe Pro Ser Gln Ala  
 530 535 540  
 Asn Phe Phe Leu Cys Glu Val Thr His Lys Tyr Ser Ala Arg Glu Leu  
 545 550 555 560  
 Ala Glu Val Leu Leu Arg Glu His Asp Ile Leu Val Lys Asp Cys Ser  
 565 570 575  
 Leu Lys Arg Gly Met Tyr Gly Lys Gln Tyr Ile Arg Ile Ala Ile Arg  
 580 585 590  
 Ser Lys Glu Glu Asn Arg Tyr Leu Ala Gly Ile Leu Lys Tyr Lys Leu  
 595 600 605

<210> 8787  
 <211> 154  
 <212> PRT  
 <213> B.fragilis

<400> 8787  
 Lys Ser Leu Leu Arg Val Ile Ala Glu Glu Ala Phe Tyr Phe Leu Thr  
 1 5 10 15  
 Asp Leu Pro Phe Thr Glu Thr Arg Ser Asn Glu Lys Glu Ile Lys Gly  
 20 25 30  
 Arg Glu Cys Arg Cys Asn Leu Leu Asn Leu Pro His Gly His Leu Thr  
 35 40 45



Lys Val Ile Thr Ser His Thr Lys Ser Lys Cys Ile Leu Ala Pro Pro  
 50 55 60  
 Gly Arg Met His Leu His Thr Asn Lys Thr Asn Asn Lys Pro Ile Cys  
 65 70 75 80  
 His Arg Trp Ala Leu Ala Leu Ile Arg Thr Phe Thr Ile Ser Pro Gly  
 85 90 95  
 Gly Ile Leu Met Leu Arg Leu Lys Ile His Leu Cys Thr Arg Phe Glu  
 100 105 110  
 Ser His Arg Leu Phe Ser Arg Asn Ser His Tyr Leu Ser Arg Arg Gln  
 115 120 125  
 Ile Ile Thr Phe Thr Gly Phe Ala Leu Phe Tyr Phe Lys Gly Ser Glu  
 130 135 140  
 Thr Tyr Gln Cys Asp Gly Phe Ser Leu Met  
 145 150

<210> 8788  
 <211> 1011  
 <212> PRT  
 <213> B.fragilis

<400> 8788

Ile Lys Ser Lys Met Gln Asn Lys Gly Phe Val Lys Val Phe Ala Val  
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 Leu Leu Thr Leu Val Cys Val Phe Tyr Leu Ser Phe Ser Phe Val Thr  
 20 25 30  
 Arg His Tyr Thr Asn Lys Ala Lys Glu Phe Ala Lys Gly Asp Val Lys  
 35 40 45  
 Val Glu Gln Asp Tyr Leu Asp Ser Leu Ser Asn Glu Lys Val Trp Leu  
 50 55 60  
 Gly Asn Tyr Thr Leu Lys Gln Cys Arg Glu Met Glu Ile Ser Leu Gly  
 65 70 75 80  
 Leu Asp Leu Lys Gly Gly Met Asn Val Ile Leu Glu Val Ser Val Pro  
 85 90 95  
 Asp Val Ile Lys Ala Leu Ala Asp Asn Lys Pro Asp Glu Ala Phe Asn  
 100 105 110  
 Lys Ala Leu Ala Glu Ala Ala Lys Gln Ala Thr Thr Ser Gln Asp Asp  
 115 120 125  
 Val Ile Thr Leu Phe Ile Lys Glu Tyr His Lys Val Ala Pro Gly Ala  
 130 135 140  
 Lys Leu Ser Glu Leu Phe Ala Thr Gln Gln Leu Lys Asp Lys Val Asn  
 145 150 155 160  
 Gln Lys Ser Ser Asp Ala Glu Val Glu Lys Val Leu Arg Glu Glu Val  
 165 170 175  
 Lys Ala Ala Val Thr Asn Ser Tyr Asn Val Leu Arg Thr Arg Ile Asp  
 180 185 190  
 Arg Phe Gly Val Val Gln Pro Asn Ile Gln Ser Leu Glu Asp Lys Met  
 195 200 205  
 Gly Arg Ile Met Val Glu Leu Pro Gly Ile Lys Glu Pro Glu Arg Val  
 210 215 220  
 Arg Lys Leu Leu Gln Gly Ser Ala Asn Leu Glu Phe Trp Glu Thr Tyr  
 225 230 235 240  
 Asn Ala Lys Glu Val Ala Pro Tyr Leu Gln Ala Ala Asp Ser Lys Leu  
 245 250 255  
 Arg Ala Val Leu Ala His Glu Ala Thr Val Asn Asp Thr Val Ala Ala  
 260 265 270  
 Val Asp Ser Thr Ala Leu Ala Ala Glu Ala Thr Pro Asp Lys Ala  
 275 280 285  
 Val Ser Ala Ala Asp Ser Leu Ala Ala Ala Leu Lys Gly Gly Glu Lys  
 290 295 300

Lys Gln Gln Ala Ser Ser Ala Asp Leu Glu Gln Leu Lys Lys Glu His  
 305 310 315 320  
 Pro Leu Leu Ala Ile Leu Ser Val Asn Pro Asn Gly Gly Pro Val Val  
 325 330 335  
 Gly Tyr Ala Asn Tyr Lys Asp Thr Ala Thr Val Asn Ser Tyr Leu Ala  
 340 345 350  
 Met Lys Glu Val Ala Ala Glu Leu Pro Lys Asp Leu Arg Leu Lys Trp  
 355 360 365  
 Gly Val Ser Pro Phe Glu Tyr Asp Pro Lys Gly Gln Thr Phe Glu Leu  
 370 375 380  
 Tyr Ala Ile Lys Ser Thr Glu Arg Asn Gly Lys Ala Pro Leu Glu Gly  
 385 390 395 400  
 Asp Val Val Thr Asp Ala Lys Asp Asp Tyr Asp Gln Tyr Gly Lys Pro  
 405 410 415  
 Ser Val Ser Met Ser Met Asn Ser Asp Gly Ala Arg Arg Trp Ala Leu  
 420 425 430  
 Leu Thr Lys Gln Asn Ile Asn Lys Ser Ile Ala Ile Val Leu Asp Asn  
 435 440 445  
 Tyr Val Tyr Ser Ala Pro Asn Val Ser Asn Glu Ile Thr Gly Gly Asn  
 450 455 460  
 Ser Gln Ile Thr Gly His Phe Thr Pro Glu Gln Ala Lys Asp Leu Ala  
 465 470 475 480  
 Asn Val Leu Lys Ser Gly Lys Met Pro Ala Pro Ala His Ile Val Gln  
 485 490 495  
 Glu Asp Ile Val Gly Pro Ser Leu Gly Gln Glu Ser Ile Asn Ala Gly  
 500 505 510  
 Ile Phe Ser Phe Val Val Ala Leu Ile Leu Leu Met Ile Tyr Met Cys  
 515 520 525  
 Ser Met Tyr Gly Phe Ile Pro Gly Met Ile Ala Asn Gly Ala Leu Val  
 530 535 540  
 Leu Asn Phe Phe Phe Thr Leu Gly Ile Leu Ser Ser Phe Gln Ala Ala  
 545 550 555 560  
 Leu Thr Met Ser Gly Ile Ala Gly Met Val Leu Ser Leu Gly Met Ala  
 565 570 575  
 Val Asp Ala Asn Val Leu Ile Tyr Glu Arg Thr Lys Glu Glu Leu Arg  
 580 585 590  
 Ser Gly Lys Gly Val Lys Lys Ala Leu Ala Asp Gly Tyr Ser Asn Ala  
 595 600 605  
 Phe Ser Ala Ile Phe Asp Ser Asn Leu Thr Ser Ile Ile Thr Gly Ile  
 610 615 620  
 Ile Leu Phe Tyr Phe Gly Thr Gly Pro Ile Arg Gly Phe Ala Thr Thr  
 625 630 635 640  
 Leu Ile Ile Gly Ile Leu Cys Ser Phe Phe Thr Ala Val Phe Met Thr  
 645 650 655  
 Arg Leu Val Tyr Glu His Phe Met Ser Lys Asp Lys Leu Leu Asn Leu  
 660 665 670  
 Thr Phe Thr Ser Pro Ile Ser Lys Lys Met Leu Val Asn Thr His Phe  
 675 680 685  
 Asp Phe Met Gly Gly Asn Lys Lys Trp Leu Thr Ile Thr Gly Val Ile  
 690 695 700  
 Leu Leu Ile Cys Ile Gly Ser Leu Val Thr Arg Gly Leu Ser Gln Ser  
 705 710 715 720  
 Ile Asp Phe Thr Gly Gly Arg Asn Phe Lys Val Gln Phe Glu Asn Pro  
 725 730 735  
 Ile Glu Pro Glu Gln Val Arg Glu Leu Ile Ser Asn Lys Phe Gly Asp  
 740 745 750  
 Ala Asn Val Ser Val Ile Ser Ile Gly Thr Asp Lys Lys Thr Val Arg  
 755 760 765  
 Ile Ser Thr Asn Tyr Arg Ile Gln Asp Glu Gly Asn Asn Val Asp Ser

770                      775                      780  
 Glu Ile Glu Ser Tyr Leu Tyr Glu Ala Leu Lys Pro Met Leu Thr Gln  
 785                      790                      795                      800  
 Asn Ile Thr Leu Ala Thr Phe Ile Asp Arg Asp Asn His Thr Gly Gly  
                     805                      810                      815  
 Ser Ile Ile Ser Ser Gln Lys Val Gly Pro Ser Ile Ala Asp Asp Ile  
                     820                      825                      830  
 Lys Thr Ser Ala Ile Trp Ser Val Val Phe Ala Leu Val Ala Ile Gly  
                     835                      840                      845  
 Leu Tyr Ile Leu Ile Arg Phe Arg Asn Ile Ala Tyr Ser Ala Gly Ser  
                     850                      855                      860  
 Val Ala Ala Leu Thr Ser Asp Thr Leu Met Ile Leu Gly Ala Tyr Ser  
 865                      870                      875                      880  
 Leu Cys Trp Gly Trp Met Pro Phe Ser Leu Glu Ile Asp Gln Thr Phe  
                     885                      890                      895  
 Ile Gly Ala Ile Leu Thr Ala Ile Gly Tyr Ser Ile Asn Asp Lys Val  
                     900                      905                      910  
 Val Ile Phe Asp Arg Val Arg Glu Phe Phe Gly Leu Tyr Pro Lys Arg  
                     915                      920                      925  
 Asn Val Lys Gln Leu Phe Asp Asp Ser Leu Asn Thr Thr Leu Ala Arg  
 930                      935                      940  
 Thr Ile Asn Thr Ser Leu Ser Thr Leu Ile Val Leu Leu Cys Ile Phe  
 945                      950                      955                      960  
 Ile Leu Gly Gly Asp Ser Ile Arg Ser Phe Ala Phe Ala Met Ile Leu  
                     965                      970                      975  
 Gly Val Val Ile Gly Thr Leu Ser Ser Leu Phe Val Ala Ser Pro Ile  
                     980                      985                      990  
 Ala Tyr Met Met Leu Lys Asn Lys Lys Gly Ser Ala Pro Ala Thr Thr  
                     995                      1000                      1005  
 Thr Glu Glu  
 1010

<210> 8789  
 <211> 82  
 <212> PRT  
 <213> B.fragilis

<400> 8789  
 Ile Ser Pro Asn Arg Asp Ser Ser Val Thr Ser Asn Gly Thr Ile Ser  
 1                      5                      10                      15  
 Thr Phe Glu Ala Ala Ser Leu Lys Arg Ser Glu Gly Thr Val Asp Thr  
                     20                      25                      30  
 Ser Ser Glu Arg Leu Ile Thr Gly Ile Pro Asp Leu Asp Ile Gly Ser  
                     35                      40                      45  
 Cys Phe Leu Leu Glu Leu His Pro Asn Asn Thr Asn Thr Pro Ile Ser  
 50                      55                      60  
 Asn Lys Asp Met Cys Phe Ile Ala Thr Ile Glu Leu Arg Phe Ile Val  
 65                      70                      75                      80  
 Cys Ala

<210> 8790  
 <211> 493  
 <212> PRT  
 <213> B.fragilis

<400> 8790  
 Phe Glu Asn Lys Met Lys Ser Phe Thr Phe Phe Arg Thr Glu Glu Gly  
 1                      5                      10                      15

Asn Tyr Tyr Leu Tyr Asn Ser Arg Lys Ser Ser Leu Leu Asn Val His  
 20 25 30  
 Pro Val Ile Lys Val Ile Glu Ala Leu Asp Asn Asn Asp Gly Glu Glu  
 35 40 45  
 Thr Leu Phe Ala Lys Ile Met Asn Gln Asn Leu Glu Ile Gly Asp Asp  
 50 55 60  
 Glu Lys Arg Leu Leu Leu Asp Lys Tyr Leu Phe Leu Arg Asp Asn Gly  
 65 70 75 80  
 Phe Phe Glu Glu Ile Asn Glu Glu Asp Phe Ile Asp Gly Lys Ile Thr  
 85 90 95  
 Pro Glu Ile Val Glu Lys Gln Ile Ala Phe Ile Asp Asn Val Leu Phe  
 100 105 110  
 Gln Val Thr Gly Asn Cys Asn Leu Arg Cys Gln Tyr Cys Cys Tyr Gly  
 115 120 125  
 Asp Met Tyr Ser Asp Lys Val Glu Lys Lys Asn Leu Ser Phe Glu Thr  
 130 135 140  
 Val Glu Thr Val Leu Asn Tyr Leu Met Ser Leu Trp Thr Ser Asn Lys  
 145 150 155 160  
 Asn Leu Ser Tyr Glu His Pro Ile Arg Ile Gly Phe Tyr Gly Gly Glu  
 165 170 175  
 Pro Leu Val Asn Phe Ser Leu Ile Glu Lys Ile Val Ser Leu Cys Glu  
 180 185 190  
 Ser Ile Thr Glu Arg Thr Gly Leu Val Phe Ile Tyr Ser Met Thr Thr  
 195 200 205  
 Asn Ala Leu Leu Leu Asp Arg Tyr Lys Asp Phe Ile Val Arg His Asn  
 210 215 220  
 Phe Ser Leu Leu Ile Ser Met Asp Gly Asn Glu Ala His Asn Val Leu  
 225 230 235 240  
 Arg Ile Lys Pro Asp Gly Glu Gln Ser Phe Gln Thr Val Tyr Glu Asn  
 245 250 255  
 Val Lys Lys Leu Gln Gln Gln Tyr Pro Asp Tyr Phe Gln Asn Lys Val  
 260 265 270  
 Glu Phe Asn Ser Val Leu Asn Ser His Ser Ser Val Asp Asp Ile His  
 275 280 285  
 Asp Phe Ile Phe Asn Glu Phe Gly Lys Ile Pro Leu Ile Glu Thr Ile  
 290 295 300  
 Ser His Thr Ala Leu Ser Asp Glu Gln Lys Tyr Gln Glu Ile Ala Lys  
 305 310 315 320  
 Asp Tyr Lys Glu Ser Pro Glu Met Met Ile Lys Arg Lys Asp Arg Ser  
 325 330 335  
 Pro Val Tyr Lys Glu Leu Gly Phe Phe Phe Tyr Tyr Gln Leu Asp Asn  
 340 345 350  
 Ala Tyr Lys His Tyr Cys Glu Val Leu Tyr Gly Thr Ile Lys Gln Lys  
 355 360 365  
 Lys Arg Ile Pro Thr Gly Thr Cys Leu Pro Phe Phe Lys Lys Met Phe  
 370 375 380  
 Val Thr Ala Asp Asn Lys Leu Leu Thr Cys Glu Arg Ile Ser Leu His  
 385 390 395 400  
 His Val Leu Gly Thr Val Asp Asn Glu Val His Leu Asn Phe Gly Glu  
 405 410 415  
 Ile Ala Ser Ile Tyr Asn Ser Tyr Tyr Glu Lys Met Arg Ser Gln Cys  
 420 425 430  
 Arg Gly Cys Tyr Leu Ile Glu Asn Cys Gly Glu Cys Phe Leu Gln Phe  
 435 440 445  
 Pro Leu Lys Asn Gly Val Pro Val Cys His Val Lys Met Asn Glu Ile  
 450 455 460  
 Gln Tyr Gln His Tyr Leu Ser Glu Ile Phe Gly Val Leu Glu Lys Asn  
 465 470 475 480  
 Pro Ser Leu Phe Glu Glu Val Asn Lys Met Val Phe Ala

<210> 8791  
 <211> 126  
 <212> PRT  
 <213> B.fragilis

<400> 8791  
 Cys Asn Ser Asn Leu Leu Ala Met Asp Lys Ile Glu Phe Arg Glu Asp  
 1 5 10 15  
 Lys Ile Thr Phe Ser Tyr Lys Lys Ser Tyr Gly Glu Cys Leu Tyr Gln  
 20 25 30  
 Asp Leu Ile Ala Val Glu Tyr Ser Lys Pro Tyr Cys Ile Leu Gln Ile  
 35 40 45  
 Gly Gly Arg Asn Ser Ile Leu Phe Leu Ile Ser Leu Arg Val Ile Leu  
 50 55 60  
 Glu Lys Leu Pro Ala Asp Phe Leu Leu Ile Asn Arg Gly Ile Ile Val  
 65 70 75 80  
 Asn Lys Glu Arg Ile Val Asp Cys Val Leu Gln Asp Gly Ala Tyr His  
 85 90 95  
 Ile Lys Met Asp Asn Asn Lys Ile Tyr Arg Ile Ser Thr Arg Lys Leu  
 100 105 110  
 Ala Thr Val Lys Lys Tyr Phe Met Val Gln Asn Asp Thr Ile  
 115 120 125

<210> 8792  
 <211> 334  
 <212> PRT  
 <213> B.fragilis

<400> 8792  
 Asn Lys Gln Asn Glu Gln Ser Met Lys Lys Val Ile Leu Ala Val Ala  
 1 5 10 15  
 Ser Ile Ala Leu Trp Ala Ser Cys Ile Glu Asp Glu Lys Asp Tyr Ser  
 20 25 30  
 Gln Ile Ile Glu Thr Arg Val Ala Asn Cys Glu Thr Ser Lys Asp Phe  
 35 40 45  
 Ser Val Pro Val Lys Glu Gly Tyr Thr Thr Phe Val Thr Ser Gly Glu  
 50 55 60  
 Asp Thr Leu Ala Met Ala Asn Glu Pro Ile Thr Ile Arg Ile Pro Lys  
 65 70 75 80  
 Asn Ala Thr Ile Ser Thr Arg Ala Glu Gly Asp Gly Ile Asn Ile Ser  
 85 90 95  
 Tyr Thr Ile Leu Asp Glu Gly Ser Glu Thr Thr Tyr Ala Lys Val Trp  
 100 105 110  
 Gln Ala Ile Met Phe Glu Asp Thr Gln Asn Gly Asp Tyr Asp Tyr Asn  
 115 120 125  
 Asp Leu Ile Ile His Val Lys Asn Thr Ala Ser Asn His Ala Tyr Gln  
 130 135 140  
 His Pro Ser Glu Thr Trp Gln Thr Ile Glu Ile Gln Pro Ile Ala Leu  
 145 150 155 160  
 Gly Ser Thr Lys Thr Ile Lys Leu Gly Cys Ile Leu Ser Asp Gly Ser  
 165 170 175  
 Thr His Met Ile Ser Asp Asp Val Arg Thr Asp Leu Phe Gly Gly Arg  
 180 185 190  
 Gln Gly Phe Ile Asn Thr Val Asn Asp Asn Asp Pro Ile Arg Tyr Lys  
 195 200 205  
 Leu Ala Ser Thr Asn Ile Lys Asn Tyr Ala Met Pro Lys Lys Glu Lys  
 210 215 220

Thr Ser Ala Ala Trp Val Ala Trp Phe Ile Glu Val Asp Gly Lys Arg  
 225 230 235 240  
 Met Tyr Ala Ala Ser Ser Asp Ile Asp Tyr Lys Ser Tyr Asp Met Val  
 245 250 255  
 Asn Lys Glu Asn Met Pro Tyr Gly Leu Ala Val Ser Asn Asn Asn Gly  
 260 265 270  
 Thr Phe Ser Tyr Pro Gln Glu Lys Asn Ser Leu Phe Glu Thr Tyr Pro  
 275 280 285  
 Gly Phe Ser Asp Trp Ile Asn Gly Lys Val Ser Ser Ile Gly Ser Phe  
 290 295 300  
 Gln Lys Glu Leu Val Tyr Lys Tyr Cys Ser Gly Gly Ile Ile Gly Glu  
 305 310 315 320  
 Asp Gly Lys Ser His Lys Ile Trp Asp Tyr Leu Asp Leu Asn  
 325 330

<210> 8793

<211> 1003

<212> PRT

<213> B.fragilis

<400> 8793

Ile Met Lys Lys Lys Ile Ser Arg Leu Ile Cys Ala Val Ala Cys Cys  
 1 5 10 15  
 Val Pro Val Ala Leu Gln Ala Gln Thr Ser Glu Lys Ile Thr Ser Pro  
 20 25 30  
 Val Asn Leu Tyr Lys Glu Gly Lys Glu Leu Phe Leu Gln Lys Asn Tyr  
 35 40 45  
 Ala Ala Ala Met Pro Pro Leu Arg Thr Phe Val Arg Gln Lys Ala Asp  
 50 55 60  
 Val Asn Leu Lys Glu Glu Ala Glu Tyr Met Leu Val Cys Ser Ala Tyr  
 65 70 75 80  
 Glu Leu Lys Asp Arg Asn Ala Ile Ala Gln Leu Arg Asn Tyr Leu Asp  
 85 90 95  
 Thr Tyr Pro Asp Thr Pro His Ala Asn Arg Ile Tyr Ala Leu Ile Ala  
 100 105 110  
 Ser Ala Tyr Phe Tyr Gln Gly Asn Tyr Asp Glu Ala Leu Ala Leu Phe  
 115 120 125  
 Asn Ser Ser Arg Leu Asp Leu Glu Gly Asn Glu Glu Arg Asp Asp Met  
 130 135 140  
 Thr Tyr Gln Leu Ala Thr Cys Tyr Leu Lys Val Gly Asn Val Lys Glu  
 145 150 155 160  
 Ala Ala Ile Trp Phe Glu Thr Leu Lys Ala Ser Ser Pro Lys Tyr Ala  
 165 170 175  
 Asn Asp Cys Ser Tyr Tyr Ile Ser Tyr Ile Arg Tyr Thr Gln Lys Arg  
 180 185 190  
 Tyr Asp Glu Ala Leu Lys Gly Phe Leu Pro Leu Gln Asp Asp Ala Lys  
 195 200 205  
 Tyr Lys Ala Leu Val Pro Tyr Tyr Ile Ala Glu Ile Tyr Ala Val Lys  
 210 215 220  
 Lys Asn Tyr Asp Lys Ala Gln Ile Val Ala Gln Asn Tyr Leu Ser Ala  
 225 230 235 240  
 Tyr Pro Gln Asn Glu His Ala Ala Glu Met Tyr Arg Ile Leu Gly Asp  
 245 250 255  
 Ala Tyr Tyr His Phe Gly Asp Tyr His Lys Ala Val Ala Ser Phe Arg  
 260 265 270  
 Asn Tyr Leu Glu Lys Glu Asn Thr Pro Arg Arg Asp Ala Leu Tyr Met  
 275 280 285  
 Leu Gly Leu Ser Tyr Phe Gln Thr Gly Val Phe Ser Lys Ala Ala Glu  
 290 295 300

Thr Leu Gly Glu Val Thr Thr Glu Ser Asp Ala Leu Thr Gln Asn Ala  
 305 310 315 320  
 Tyr Leu His Met Gly Leu Ala Tyr Leu His Leu Ala Glu Lys Asn Lys  
 325 330 335  
 Ala Arg Met Ala Phe Glu Gln Ala Ala Ala Ser Asn Ala Asn Leu Lys  
 340 345 350  
 Ile Lys Glu Gln Ala Ala Tyr Asn Tyr Ala Leu Cys Ile His Glu Thr  
 355 360 365  
 Ser Tyr Ser Ala Phe Gly Glu Ser Val Thr Val Phe Glu Lys Phe Leu  
 370 375 380  
 Asn Glu Phe Pro Asn Ser Glu Tyr Ala Glu Met Val Ser Ser Tyr Leu  
 385 390 395 400  
 Val Glu Val Tyr Met Asn Thr Arg Ser Tyr Glu Ala Ala Leu Lys Ser  
 405 410 415  
 Ile Asp Arg Ile Ala His Pro Gly Lys Arg Ile Leu Glu Ala Lys Gln  
 420 425 430  
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Gly Phe Ile Pro Gly Tyr Val Arg Leu Gly Tyr Gly Asn Tyr Gly Asn  
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 Ile Val Met Lys Ser Ile Leu Leu Leu Leu Ile Ile Thr Leu Leu Gly  
 1 5 10 15  
 Cys Ser Ser Asn Met Lys Gln Glu Pro Ile Ser Lys Ser Gly Ile Pro  
 20 25 30  
 Val Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu  
 35 40 45  
 Ser Glu Ser Ala Glu Lys Leu Glu Ile Val Pro Leu Glu Met Thr Asp  
 50 55 60  
 Gln Ser Met Leu Gly Glu Ile Arg Arg Ile Gln Val Thr Glu His Asp  
 65 70 75 80  
 Ile Trp Ile His Asp Phe Asn Lys Phe Tyr Ile Tyr Arg Phe Ser Arg  
 85 90 95

Thr Gly Lys Phe Leu Asn Arg Ile Gly Ser Ile Gly Gln Ala Pro Gly  
 100 105 110  
 Glu Tyr Val Asn Phe Ser Thr Phe Leu Val Asp Glu Tyr Lys Lys Glu  
 115 120 125  
 Val Tyr Ile Ile Ser Asn Asn Asn Gly Ile Leu Val Tyr Asn Phe Lys  
 130 135 140  
 Gly Glu Phe Lys Lys Lys Ile Val Asp Gln Gln Thr Ile Asn Asn Leu  
 145 150 155 160  
 Phe Ser Ser Val Tyr Ser Gln Tyr Ile Leu Tyr Asn Gly Asn Phe Phe  
 165 170 175  
 Ala Ala Gln Asn Ile Ala Leu Tyr Lys Leu Ile Asp Lys Asp Ser Leu  
 180 185 190  
 Trp Ser Phe Ala Phe Leu Asp Thr Ala Phe Gln Glu Lys Lys Leu Phe  
 195 200 205  
 Lys Asn Pro Ala His Met Gly Arg Glu Glu Gln Ile Ile Ala Asn Cys  
 210 215 220  
 Val Asp Lys Gly Arg Met Ile Asn Leu Trp Met Glu Tyr Gln Thr Ser  
 225 230 235 240  
 Ile Asp Thr Tyr Asn Asn Gln Leu Thr Leu Lys Tyr Pro Asp Thr Asp  
 245 250 255  
 Thr Ile Tyr Cys Tyr Asp Asp Ala Thr Asn Asp Leu Leu Ser Gln Tyr  
 260 265 270  
 Val Ile Cys Thr Arg Glu Glu Lys Gly Asp Tyr Glu Val Thr His Leu  
 275 280 285  
 Trp Phe Lys Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile Lys Ser Tyr  
 290 295 300  
 Tyr Pro Thr Lys Ala Phe Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu  
 305 310 315 320  
 Val Tyr Thr Tyr Cys Tyr Asn Lys Lys Asp Gly Ser Val Arg Leu Gln  
 325 330 335  
 Lys Arg Gln Ser Ala Ile Thr Glu Arg Asp Val Pro Trp Phe Ser Phe  
 340 345 350  
 Pro Leu Arg Gln Met Lys Arg Asp Phe Val Leu Asp Asn Asp Leu Gly  
 355 360 365  
 Gly Gly Asp Phe Thr Val Asp Ser Arg Ser Ser Gly Lys Tyr Trp Val  
 370 375 380  
 Asp Ile Leu Glu Pro Gly Gly Asp Glu Asn Trp Ile Asp Ile Asp Gln  
 385 390 395 400  
 Ile Lys Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile  
 405 410 415  
 Arg Val Leu Glu Ser Ala Thr Glu Asp Ser Asn Pro Ile Leu Met Ile  
 420 425 430  
 Ala Thr Leu Lys  
 435

&lt;210&gt; 8797

&lt;211&gt; 436

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8797

Ile Val Met Lys Ser Ile Leu Leu Leu Leu Ile Ile Thr Leu Leu Gly  
 1 5 10 15  
 Cys Ser Ser Asn Lys Lys Gln Glu Pro Ile Ser Arg Ser Gly Val Pro  
 20 25 30  
 Val Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu  
 35 40 45  
 Ser Glu Ala Ala Glu Lys Leu Glu Ile Val Pro Leu Glu Met Thr Asp  
 50 55 60

Glu Ser Val Leu Ser Asp Ile Thr Glu Met Gln Val Thr Asp His Asn  
 65 70 75 80  
 Ile Trp Ile Asp His Gly Arg Glu Phe Tyr Ile Tyr Arg Phe Ser Arg  
 85 90 95  
 Thr Gly Lys Phe Leu Asn Arg Ile Gly Ser Ile Gly Gln Gly Pro Gly  
 100 105 110  
 Glu Tyr Val Asn Tyr Leu Thr Phe Leu Val Asp Glu Asp Lys Lys Glu  
 115 120 125  
 Val Tyr Ile Phe Ser Thr Asn Asn Gly Val Leu Val Tyr Asp Phe Glu  
 130 135 140  
 Gly Gly Phe Lys Lys Gln Ile Ser Asp Phe Gln Thr Met Val Gly Met  
 145 150 155 160  
 Phe Ser Ser Ile Tyr Lys Gln Tyr Ile Leu Asn Asp His Lys Phe Phe  
 165 170 175  
 Ala Ile Gln Asn Phe Gly Leu Tyr Arg Ser Val Asp Lys Asp Ser Leu  
 180 185 190  
 Trp Ser Phe Val Ser Leu Asp Asp Asn Phe Gln Lys Lys Arg Leu Phe  
 195 200 205  
 Lys Asn Pro Val His Val Gly Lys Glu Glu Gln Ile Ile Ala Asn Arg  
 210 215 220  
 Ala Asn Met Asp Arg Met Val Asn Tyr Trp Met Glu Tyr Leu Thr Ser  
 225 230 235 240  
 Val Asp Ile Tyr Asn Gly Gln Leu Thr Leu Lys Tyr Pro Asp Thr Asp  
 245 250 255  
 Thr Ile Tyr Cys Tyr Asp Asp Ala Thr Asn Gln Leu Leu Pro Gln Tyr  
 260 265 270  
 Ala Ile Phe Thr Asp Glu Glu Lys Gly Asp Tyr Glu Ala Thr His Leu  
 275 280 285  
 Trp Phe Lys Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile Phe Ser Tyr  
 290 295 300  
 Tyr Pro Thr Lys Asp Phe Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu  
 305 310 315 320  
 Val Tyr Thr Tyr Cys Tyr Asn Lys Lys Asp Gly Ser Val Arg Leu Gln  
 325 330 335  
 Lys Arg Gln Ser Thr Ile Thr Glu Arg Asp Val Pro Trp Phe Ser Phe  
 340 345 350  
 Pro Leu Arg Gln Met Lys Arg Asp Phe Val Leu Asp Asn Asp Leu Gly  
 355 360 365  
 Gly Gly Asp Phe Thr Val Asp Ser Arg Ser Ser Gly Lys Tyr Trp Ile  
 370 375 380  
 Asp Ile Leu Glu Pro Gly Gly Asp Glu Asn Trp Ile Asp Ile Asp Gln  
 385 390 395 400  
 Ile Lys Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile  
 405 410 415  
 Arg Val Leu Glu Ser Thr Thr Glu Asp Ser Asn Pro Ile Leu Met Ile  
 420 425 430  
 Ala Thr Leu Lys  
 435

<210> 8798  
 <211> 411  
 <212> PRT  
 <213> B.fragilis

<400> 8798  
 Asn Gly Val Cys Met Lys Lys Tyr Trp Phe Ile Val Glu Thr Tyr Val  
 1 5 10 15  
 Phe Leu Trp Lys Lys Glu Asp His Ile Leu Val Tyr Asn Ser Ile Ser  
 20 25 30

Gly Lys Gly Tyr Ile Tyr Lys Cys Ser Pro Asp Leu Leu Ser Phe Met  
 35 40 45  
 Asp Gln Leu Met Leu Pro Glu Asn Leu Tyr Cys Ser Gln Val Asp Glu  
 50 55 60  
 Glu Leu Leu Arg Arg Lys Ser Ile Gly Glu Phe Val Ile Ser Met Gln  
 65 70 75 80  
 Ser Asn Phe Cys Gly Ser Leu Phe Asp Val Asp Glu Phe Pro Gln Lys  
 85 90 95  
 Pro Ile Val Ala Val Pro Asp Val Asn Ile Gly Glu Asp Ile Glu Gly  
 100 105 110  
 Val Asp Asn Ser Val Phe Gly Gly Asn Val Leu Arg Asn Leu Thr Asp  
 115 120 125  
 Val Phe Ile Cys Leu Thr Gly Lys Cys Asn Lys Asn Cys Pro Asp Cys  
 130 135 140  
 Asn Leu Ile Tyr Lys Lys Met Cys Trp Cys His Lys Ser Asn Glu Ser  
 145 150 155 160  
 Leu Ala Phe Glu Lys Leu Glu Ala Ile Leu Lys Lys Leu Glu Tyr Leu  
 165 170 175  
 Asn Val Phe Glu Leu His Phe Thr Gly Gly Asn Met Phe Leu Tyr Pro  
 180 185 190  
 Tyr Trp Arg Glu Leu Leu Ile Lys Leu Asn Glu Ile Ser Tyr Lys Lys  
 195 200 205  
 Ser Phe Tyr Val His Tyr Ser Gln Leu Arg Gly Tyr Asp Glu Asp Ile  
 210 215 220  
 Asp His Ile Leu Asn Leu Glu Asn Ser Val Ile Arg Ile Leu Val Asp  
 225 230 235 240  
 Phe Ala Asp Phe Asp Val Glu Asn Leu Leu Leu Ile Ser Lys Ser Gly  
 245 250 255  
 Gly Pro Phe Glu Tyr Leu Phe Lys Ile Thr Ser Trp Asn Glu Tyr Asn  
 260 265 270  
 Glu Ala Cys Asp Ile Ile Glu Arg Leu Cys Leu Asn Ala Lys Ile Ile  
 275 280 285  
 Pro Phe Tyr Asn Val Gly Asn Tyr Ser Phe Phe Glu Asp Asn Val Phe  
 290 295 300  
 Leu Asn Met Gln Asp Ile Leu Ser Thr Lys Trp Thr Lys Asn Glu Ile  
 305 310 315 320  
 Phe Ala Asn Gln Lys Leu Asn Thr Asn Asp Phe Gly Lys Ile Arg Ile  
 325 330 335  
 Leu Glu Asn Gly Phe Val Tyr Ala Asn Leu Asn Phe Ala Pro Ile Gly  
 340 345 350  
 Lys Trp His Asp Asp Tyr Arg Glu Ile Val Tyr Asn Glu Leu Lys Arg  
 355 360 365  
 Gly Thr Ser Trp Arg Arg Thr Arg Asp Ser Leu Pro Val Cys Lys Glu  
 370 375 380  
 Cys Leu Cys Lys Tyr Leu Cys Pro Ser Pro Ser Asn Tyr Glu Leu Ala  
 385 390 395 400  
 Ile Gly Lys Ser Asn Leu Cys His Val Lys Ser  
 405 410

&lt;210&gt; 8799

&lt;211&gt; 126

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8799

Ser Val Thr Cys Ile Ser Val Ile Ser Leu Asn Thr Asp Ser Ser Val  
 1 5 10 15  
 Ile Ser Lys Gly Thr Ile Ser Asn Phe Ser Ala Ala Ser Leu Lys Arg  
 20 25 30

Ser Glu Gly Thr Val Asp Thr Ser Ser Glu Arg Leu Ile Thr Gly Thr  
 35 40 45  
 Pro Asp Leu Asp Ile Gly Ser Cys Phe Leu Leu Glu Leu His Pro Asn  
 50 55 60  
 Ser Val Ile Ile Ser Asn Asn Asn Ile Asp Phe Ile Thr Ile Tyr Leu  
 65 70 75 80  
 Leu Glu Thr Thr Tyr Phe Ser Ile Ile Gly Thr Tyr Ser Ile Ile Leu  
 85 90 95  
 Lys Leu Gln Ser Ser Lys Pro Asp Cys Tyr Pro Gln Ser His Phe Pro  
 100 105 110  
 Lys Pro Glu Leu Ala Pro Phe Ser Trp Ile His Leu Leu Gln  
 115 120 125

&lt;210&gt; 8800

&lt;211&gt; 399

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8800

Asn Glu Phe Cys Met Lys Val Leu Tyr Val Ile Phe Ile Cys Val Leu  
 1 5 10 15  
 Tyr Ser Cys Met Gln Asn Val Glu Pro Asp Asn Lys Ile Asn Val Gly  
 20 25 30  
 Ala Ala Met Asn Ala Leu Gly Lys Ile Thr Ala Gln Thr Ile Ser Ser  
 35 40 45  
 Asn Val Arg Tyr Val Ala Leu Glu Thr Asn Asp Ser Ser Leu Val Gly  
 50 55 60  
 Glu Met Pro Asp Met Arg Val Leu Glu His Ala Ile Leu Val Ser Ser  
 65 70 75 80  
 Val Asn Gln Cys Leu Lys Leu Phe Asp Arg Ser Thr Gly Lys Phe Ile  
 85 90 95  
 Arg Asp Ile Gly His Val Gly Thr Asp Pro Gln Gly Tyr Ala Lys Asp  
 100 105 110  
 Ala Trp Gly Lys Val Asn Tyr Trp Val Asp Tyr Asp Gln Asn Ile Ile  
 115 120 125  
 Tyr Val Leu Gly Trp Gly Asn Asp Leu Ile Leu Tyr Asp Leu Ala Gly  
 130 135 140  
 Asn Tyr Lys Asp Arg Ile Cys Ile Asp Asp Asn Val Arg Tyr Asn Leu  
 145 150 155 160  
 Gln Gln Ser Tyr Leu Tyr Val Thr Tyr Gly Lys Leu Trp Gly His Asn  
 165 170 175  
 Lys Leu Asp Ile Ser Lys Ser Pro Leu Phe Cys Ile Asp Glu Asn Ser  
 180 185 190  
 Asn His Ile Thr Asp Ile Val Gly Leu Pro Val Asp Leu Leu Pro Met  
 195 200 205  
 Asp Asp Leu Gln Ser Val Ser Glu Leu Leu Gly Asp Tyr Val Ser Tyr  
 210 215 220  
 Gly Gly Asp Leu Thr Met Ala Ser Phe Ala Asn Gly Gly Lys Phe Tyr  
 225 230 235 240  
 Thr Ala Ile Asn Ser Pro Ser Leu Trp Arg Phe Glu Asn Asp Ile Arg  
 245 250 255  
 Leu Lys Gln Thr Phe Asn Asp Thr Ile Tyr Thr Leu Ser Asp Ser Lys  
 260 265 270  
 Ile Lys Pro Tyr Leu Ile Phe Glu Leu Gly Asp Trp Ala Trp Gln Tyr  
 275 280 285  
 Gln Asp Arg Leu Glu Glu Gly Gly Cys Glu Lys Lys Ile Met Ile Asp  
 290 295 300  
 Tyr Ala Leu Glu Asn Glu Arg Cys Ile Tyr Phe His Phe His Thr Gly  
 305 310 315 320

Phe Tyr Thr Lys Asn Arg Gln Ala Phe Cys Gly Leu Tyr Tyr Lys Ala  
 325 330 335  
 Asp His Arg Val Val Leu Met Cys Gly Asp Arg Leu Leu Asp Thr Val  
 340 345 350  
 Asn Arg Gln Ser Leu Arg Val Arg Gly Val Ser Ser Asp Gly Cys Phe  
 355 360 365  
 Ile Ala Leu Leu Gln Pro Asp Glu Leu Cys Asp Glu Val Lys Lys Lys  
 370 375 380  
 Thr Gly Ser Lys Glu Glu Asp Asn Pro Ile Val Val Ile Leu Glu  
 385 390 395

<210> 8801  
 <211> 428  
 <212> PRT  
 <213> B.fragilis

<400> 8801

Lys Ile Leu Cys Ile Phe Thr Ser Asn Leu Met Met Asp Lys Ala Met  
 1 5 10 15  
 Arg Ile Ile Leu Ile Leu Gly Ala Met Ile Leu Gly Phe Thr Ala Cys  
 20 25 30  
 Ser Asn Lys Lys Thr Val Asn Pro Asn Pro Val Val Arg Asp Asn Ile  
 35 40 45  
 Ile His Leu Ser Thr Ala Ile Lys Asn Val Arg Glu Glu Met Met Leu  
 50 55 60  
 Ser Glu Leu Val Asp Ser Val Arg Tyr Ile Pro Leu Glu Thr Asn Pro  
 65 70 75 80  
 Asn Cys Met Leu Arg Asn Tyr Gln Arg Leu Thr Phe Ser Pro Gln Tyr  
 85 90 95  
 Ile Phe Tyr Leu Asn Tyr Cys Phe Asp Trp Asn Gly Gln Phe Leu Phe  
 100 105 110  
 Arg Ile Gly Ser Gln Gly Gln Gly Ala Cys Glu Asp Ile Tyr Ala His  
 115 120 125  
 Val Ala Glu Ile Val Tyr Leu Asn Asn His Phe Tyr Gly Asn Ala Ser  
 130 135 140  
 Lys Ile Ile Glu Tyr Asp Arg Gly Lys Cys Thr Gly Lys Glu Leu  
 145 150 155 160  
 Ser Trp Phe Thr Gln Lys Thr Met Asp Thr Ala Pro Val Gly His Leu  
 165 170 175  
 Val Asn Gln Val Cys Phe Ala Pro Ala Gly Glu Asn Leu Met Phe Tyr  
 180 185 190  
 Asn Ser Pro Asp Thr Val Tyr Phe Ile Asn Thr Asp Tyr Glu Phe Val  
 195 200 205  
 Ala Lys Arg Ser Met Met Pro Trp Asn Arg Lys Gly Ile Ala Pro Ser  
 210 215 220  
 Met Gly Ser Val Lys Tyr Thr Ser Tyr Tyr Lys Asp Thr Thr Leu Phe  
 225 230 235 240  
 Tyr Ile Phe Tyr Thr Asp Thr Val Phe Thr Val Thr Pro Thr Ser Leu  
 245 250 255  
 Val Pro Arg Trp Val Val Glu Leu Asp Glu Glu Leu Arg Phe Pro Thr  
 260 265 270  
 Gln Tyr Leu Tyr Glu Asp Gly Leu Phe Ser Asp Ala Phe Lys Cys Trp  
 275 280 285  
 Glu Ser Gly Asn Leu Glu Asn Ala Lys Met Ile Lys Met Leu Asp His  
 290 295 300  
 Lys Tyr Ile Val Ser Gly Val Phe Glu Thr Glu His Phe Val Phe Leu  
 305 310 315 320  
 Ser Val Tyr Glu Tyr Met Ala Tyr Trp Glu Leu Arg Lys Leu Pro Lys  
 325 330 335



Pro Pro Leu Leu Thr Ala Ile Tyr Asn Lys Arg Thr Gly Glu Thr Phe  
 340 345 350  
 Ala Val Lys Gln Ile Ile Asp Asp Leu Gly Gly Met Lys Thr Phe Phe  
 355 360 365  
 Pro Ser Trp Gly Ala Tyr Asn Glu Lys Leu Leu Ala Thr Ile Trp Pro  
 370 375 380  
 Tyr Lys Leu Lys Glu Phe Ile Glu Glu Glu Gln Ser Ala Gly Arg Thr  
 385 390 395 400  
 Val Ala Pro Gln Ile Leu Asn Leu Met Lys Arg Val Arg Glu Asp Asp  
 405 410 415  
 Asn Pro Ile Leu Ile Ile Ala Asn Leu Lys Thr Lys  
 420 425

<210> 8802  
 <211> 561  
 <212> PRT  
 <213> B.fragilis

<400> 8802

Asp Thr Met Cys Leu Asn Lys Asn Ile Lys Ser Phe Leu Gly Ile Leu  
 1 5 10 15  
 Met Cys Gly Ile Leu Ala Phe Leu Pro Val Ser Cys Ser Asp Asp Ser  
 20 25 30  
 Pro Val Thr Gly Ser Pro Leu Leu Pro Glu Ala Pro Glu Gly Lys Val  
 35 40 45  
 Asn Val Phe Leu Ser Leu His Lys Gly Ser Asp Tyr Glu Ser Pro Ala  
 50 55 60  
 Thr Arg Ser Gly Thr Ala Ala Asp Glu Thr Ile Met Gly Pro Pro Trp  
 65 70 75 80  
 Val Leu Val Phe Leu Gly Asn Asp Lys Asp Ala Thr Phe Leu Glu Ala  
 85 90 95  
 Val Gln Ala Asp Met Thr Ser Val Gly Glu Leu Tyr Ala Gln Leu Ser  
 100 105 110  
 Ala Cys Asn Ser Ser Val Val Leu Leu Ile Ser Asn Ala Asp Glu  
 115 120 125  
 Leu Ile Gln Ala Lys Leu Gly Ser Leu Thr Thr Thr Thr Leu Ser  
 130 135 140  
 Asp Ala Val Thr Asn Leu Leu Leu Tyr Gly Asp Pro Ser Asp Ser Pro  
 145 150 155 160  
 Val Gly Gly Asn Ser Ala Leu Ala Ile Pro Gln Ala Thr Val Pro Phe  
 165 170 175  
 Thr Gly Lys Lys Ile Pro Met Ser Ala Tyr Cys Pro Leu Pro Gln Ile  
 180 185 190  
 Ile Thr Gly Thr Thr Val Gly Thr Val Gly Thr Pro Leu Arg Leu Lys  
 195 200 205  
 Arg Ile Val Ser Lys Leu Tyr Val Asp Ala Ser Gly Ala His Ala Ser  
 210 215 220  
 Asp Gly Phe Ile Leu Thr Gly Val Ser Val Ile Asn Val Pro Val Gln  
 225 230 235 240  
 Gly Ala Leu Ala Phe Glu Tyr Gly Asn Ala Asn Glu Thr Leu Pro Ile  
 245 250 255  
 Thr Ala Gln Phe Thr Asp Tyr Gly His Lys Ser Gly Ser Ala Ser Arg  
 260 265 270  
 Leu Asp Asn Pro Ile Ile Ala Ser Ser Thr Gly Phe Ala Gly His Ile  
 275 280 285  
 Thr Ala Gly Met Gly Ser Glu Asp Tyr Pro Val Tyr Val Tyr Glu Thr  
 290 295 300  
 Ala Gly Gly Pro Ala Asp Arg Ser Asp Val Ile Leu Ala Gly Lys Phe  
 305 310 315 320

Asp Asn Gly Pro Val Arg Tyr Tyr Arg Ala Ser Leu Lys Asn Ser Lys  
 325 330 335  
 Gly Glu Lys Leu Ala Phe Lys Arg Asn Tyr Leu Tyr Thr Leu Asn Leu  
 340 345 350  
 Val Arg Val Glu Gly Gly Gly Tyr Ser Thr Met Asp Glu Ala Ile Ala  
 355 360 365  
 Ala Pro Ser Gly Ser Ser Gly Ile Leu Cys Asn Val Thr Val Val Asp  
 370 375 380  
 Asp Ser His Glu Ile Thr Gly Asn Gly Val Tyr Tyr Leu Gly Leu Thr  
 385 390 395 400  
 Asn Ser Ser Tyr Val Leu Tyr Thr Asp Glu Glu Gln Lys Asp Val Thr  
 405 410 415  
 Val Cys Val Ile Gly Thr Asn Ala Tyr Ser Arg Pro Gly Ser Thr Val  
 420 425 430  
 Thr Pro Gly Val Val Ser Met Ser Ser Gly Ile Ala Gly Val Thr Leu  
 435 440 445  
 Lys Thr Thr Ser Ile Ser Ala Asp Ser Thr Ala Ile Lys Leu Asp Phe  
 450 455 460  
 Ala Lys Gly Ala Gln Gly Glu Thr Thr Leu Asp Val Gln Val Gly Gly  
 465 470 475 480  
 Leu Arg Arg Glu Ile Lys Leu Lys Ala Ala Gly Met Gly Val Ser Gly  
 485 490 495  
 Asn Tyr Ala Ser Gly Ser Gln Gly Leu Leu Leu Gly Asp Phe Asn Gln  
 500 505 510  
 Ile Arg Ile Leu Glu Ser Thr Ser Lys Ser Gly Leu Ala Ile Ser Pro  
 515 520 525  
 Ala Ser Pro Asp Arg Asp Ser Glu Val Ile Ser Ser Val Thr Ser Pro  
 530 535 540  
 Ser Val Pro Val Tyr Phe Phe Val Glu Glu Ala Ala Gly Pro Thr Lys  
 545 550 555 560  
 Cys

<210> 8803  
 <211> 228  
 <212> PRT  
 <213> B.fragilis

<400> 8803

Gln Ile Arg Arg Met Pro Thr Val Thr Lys Asn Leu Ile Ile Ile Asn  
 1 5 10 15  
 Val Leu Leu Phe Leu Ala Gln Phe Val Ala Gln Ser Tyr Gly Ile Asn  
 20 25 30  
 Leu Ser Asp Tyr Leu Gly Leu His Phe Phe Leu Ala Asp Asn Phe Asn  
 35 40 45  
 Pro Ala Gln Leu Phe Thr Tyr Met Phe Met His Gly Gly Phe Thr His  
 50 55 60  
 Ile Phe Phe Asn Met Phe Ala Val Trp Met Phe Gly Arg Ile Leu Glu  
 65 70 75 80  
 Gln Val Trp Gly Pro Lys Arg Phe Leu Phe Tyr Tyr Ile Leu Cys Gly  
 85 90 95  
 Val Gly Ala Gly Leu Leu Gln Glu Gly Val Gln Tyr Ile Gln Tyr Val  
 100 105 110  
 Thr Glu Leu Ser Gln Tyr Thr Ser Val Asn Ile Gly Thr Gly Ile Ile  
 115 120 125  
 Pro Met Ser Glu Tyr Leu Asn Met Met Thr Thr Val Gly Ala Ser Gly  
 130 135 140  
 Ala Val Tyr Ala Ile Leu Leu Ala Phe Gly Met Leu Phe Pro Asn Gln  
 145 150 155 160

Gln Leu Phe Ile Phe Pro Leu Pro Phe Pro Ile Lys Ala Lys Phe Phe  
 165 170 175  
 Val Ile Gly Tyr Ala Leu Ile Glu Leu Tyr Ala Gly Phe Ala Asn Asn  
 180 185 190  
 Pro Gly Asp Asn Val Ala His Phe Ala His Leu Gly Gly Met Ile Phe  
 195 200 205  
 Gly Phe Ile Leu Ile Met Tyr Trp Arg Lys Lys Asn Arg Asn Asn Gly  
 210 215 220  
 Thr Tyr Tyr Asn  
 225

<210> 8804

<211> 309

<212> PRT

<213> B.fragilis

<400> 8804

Ser Cys Thr Gly Glu Lys Arg Thr Glu Thr Met Gly His Ile Ile Thr  
 1 5 10 15  
 Asp Leu Lys Glu Ala Phe Arg Arg Gly Asn Val Tyr Ile Gln Leu Ile  
 20 25 30  
 Phe Ile Asn Val Gly Val Phe Val Ile Thr Thr Leu Ile Gly Ile Leu  
 35 40 45  
 Leu Gln Leu Phe Asn Arg Ser Ala Ala Gly Ile Phe Glu Leu Leu Ala  
 50 55 60  
 Leu Pro Ala Ser Phe Thr Arg Phe Ala Trp Gln Pro Trp Ser Ile Phe  
 65 70 75 80  
 Thr Tyr Met Phe Met His Ala Gly Phe Leu His Ile Leu Phe Asn Met  
 85 90 95  
 Leu Trp Leu Tyr Trp Phe Gly Ala Leu Phe Leu Tyr Phe Phe Ser Gly  
 100 105 110  
 Lys His Leu Arg Gly Leu Tyr Ile Val Gly Gly Ile Cys Gly Gly Leu  
 115 120 125  
 Leu Tyr Met Ile Ser Tyr Asn Val Phe Pro Tyr Phe Arg Pro Met Thr  
 130 135 140  
 Ala Tyr Ser Thr Met Val Gly Ala Ser Ala Ser Val Leu Ala Ile Val  
 145 150 155 160  
 Val Ala Thr Ala Tyr Arg Glu Pro Asn Tyr Pro Val Arg Leu Leu Phe  
 165 170 175  
 Phe Gly Asn Val Arg Leu Lys Tyr Leu Ala Leu Ile Val Val Leu Thr  
 180 185 190  
 Asp Leu Leu Phe Ile Thr Ser Ser Asn Ala Gly Gly His Ile Ala His  
 195 200 205  
 Leu Gly Gly Ala Leu Ala Gly Leu Trp Phe Ala Ala Ser Leu Asn Lys  
 210 215 220  
 Gly Lys Asp Ile Thr Ser Trp Val Asn Lys Ala Leu Asp Ala Ile Ala  
 225 230 235 240  
 Ala Leu Phe Ser Ala Lys Thr Trp Lys Arg Lys Pro Lys Met Lys Val  
 245 250 255  
 His Tyr Gly Asn Asn Thr Arg Gln Asn Asp Tyr Asp Tyr Asn Ala Arg  
 260 265 270  
 Lys Lys Ala Gln Ser Asp Glu Ile Asp Arg Ile Leu Asp Lys Leu Lys  
 275 280 285  
 Lys Ser Gly Tyr Glu Ser Leu Thr Thr Glu Glu Lys Lys Ser Leu Phe  
 290 295 300  
 Asp Ala Ser Lys Arg  
 305

<210> 8805

<211> 77  
 <212> PRT  
 <213> B.fragilis

<400> 8805

Ala	Asp	Ile	Gly	Ile	Phe	Phe	Pro	Val	Lys	Gly	Thr	Val	Ala	Cys	Gly
1				5					10					15	
Ile	Ala	Asn	Ala	Glu	Leu	Pro	Pro	Thr	Gly	Glu	Ser	Asp	Gly	Ser	Pro
		20						25					30		
Tyr	Arg	Arg	Arg	Leu	Val	Thr	Ala	Ser	Asp	Lys	Val	Val	Val	Val	Val
		35					40					45			
Arg	Leu	Pro	Asn	Phe	Ala	Cys	Ile	Asn	Ser	Ser	Ala	Phe	Glu	Ile	Asn
	50					55					60				
Ser	Lys	Thr	Thr	Glu	Glu	Leu	Gln	Ala	Leu	Asn	Cys	Ala			
65					70					75					

<210> 8806  
 <211> 489  
 <212> PRT  
 <213> B.fragilis

<400> 8806

Lys	Asp	Arg	Gly	Trp	Gly	Pro	Gly	Asn	Lys	Lys	Trp	Arg	Met	Pro	Thr
1				5					10					15	
Leu	Asp	Glu	Leu	Lys	Leu	Leu	Gly	Asp	Gly	Ile	Arg	Glu	Thr	Ile	Ser
		20						25					30		
Ser	Thr	Pro	Asn	Trp	Asn	Ser	Ile	Ser	Ile	Ser	Ser	Asp	Asp	Gly	Ser
		35					40					45			
Phe	Val	Ile	Ser	Asn	Gly	Ile	Arg	Thr	Asn	Asn	Arg	Tyr	Tyr	Leu	Pro
	50					55					60				
Ala	Asn	Arg	Tyr	Gly	Asp	Ser	Gly	Glu	Tyr	Trp	Ser	Ala	Ser	Ala	Ala
65					70					75					80
Ile	Ser	Gly	Ser	Ala	Arg	Gly	Leu	Cys	Phe	Arg	Tyr	Ser	Ser	Thr	Ser
				85					90					95	
Ile	Lys	Asp	Trp	Thr	Thr	Ala	Leu	Val	Ser	Gly	Ala	Ile	Arg	Cys	Val
		100						105					110		
Val	Asp	Ser	Glu	Asn	Asn	Tyr	Ser	Lys	Val	Tyr	Arg	Val	Val	Tyr	Ser
		115					120					125			
Asn	Thr	Asp	Pro	Leu	Asn	Gln	Glu	Asn	Asn	Leu	Tyr	Ser	Val	Pro	Pro
		130				135					140				
Pro	Ala	Leu	Leu	Asn	Glu	Gly	Glu	Thr	Ile	Thr	Leu	Pro	Ala	Leu	Ser
145					150					155					160
Thr	Lys	Phe	Asn	Asp	Tyr	Glu	Val	Arg	Glu	Gly	Ser	Lys	Val	Val	Thr
			165						170					175	
Lys	Tyr	Phe	His	Ser	Gly	Trp	Leu	Val	Asn	Gly	Arg	His	Phe	Asp	Phe
		180					185					190			
Gly	Asp	Ser	Tyr	Val	Val	Gly	Ala	Asp	Gly	Ile	Gly	Asn	Thr	Glu	Val
		195					200				205				
Glu	Ile	Arg	Pro	Glu	Trp	Thr	Lys	Leu	Cys	Lys	Ile	Glu	Tyr	Val	Ala
	210					215					220				
Thr	Pro	Pro	Tyr	Pro	Gly	Ala	Ile	Phe	Tyr	Trp	Arg	Phe	Pro	Ser	Thr
225					230					235					240
Thr	Ile	Phe	Val	Lys	Ile	Gly	Glu	Lys	His	Ser	Leu	Phe	Tyr	Val	Glu
			245						250					255	
Ser	Ala	Val	Asn	Ser	Ser	Pro	Val	Lys	Met	Cys	Thr	Gly	Leu	Leu	Val
		260						265					270		
Asn	Gly	Ile	Arg	Tyr	Ser	Phe	Gly	Asp	Glu	Ile	Val	Ala	Ser	Thr	Asp
	275						280					285			
Val	Lys	Ile	Glu	Pro	Tyr	Trp	Ala	Asn	Thr	Pro	Glu	Thr	Pro	Phe	Ala

290 295 300  
 Ser Thr Asn Leu Glu Leu Ser Asn Pro Gly Ser Thr Asp Ala Thr Phe  
 305 310 315 320  
 Ile Phe Ala Pro Thr Gly Ser Lys Gly Ser Lys Cys Ser His Gln Val  
 325 330 335  
 Ala Asn Ser Asn Phe Pro Ile Asn Gly Val Thr Ile Pro Ser Leu Leu  
 340 345 350  
 Pro Thr Asp Tyr Asp Asn Ala Arg Arg Leu Ile His Ser Val Glu Gly  
 355 360 365  
 Leu Lys Arg Gly Val Gly Asp Val Cys Arg Leu Val Gly Ile Pro Leu  
 370 375 380  
 Asn Glu Ile Asn Ala Lys Leu Ala Ala Gly Glu Leu Pro Asp Asn Lys  
 385 390 395 400  
 Thr Trp Arg Leu Pro Ala Val Tyr Glu Met Ala Ala Leu Leu His Pro  
 405 410 415  
 Tyr Gln Asp Ser Ser Glu Gly Arg Phe Tyr Pro Ile Leu Asn Thr Tyr  
 420 425 430  
 Phe Pro Tyr His Thr Val Tyr Ile Gly Ile Pro Gly Ile Ala Ala Ser  
 435 440 445  
 Tyr Ile Thr Ala Gly Ser Arg Asn Asn Asn Arg Val Val Thr Val Thr  
 450 455 460  
 Ile Ser Gln Gly Asp Gly Gly Ile Thr Gly Gly Met Phe Ser Ala Thr  
 465 470 475 480  
 Ser Asp Tyr Ala Arg Cys Ile Arg Gln  
 485

<210> 8807  
 <211> 189  
 <212> PRT  
 <213> B.fragilis

<400> 8807  
 Asn Cys Phe Phe Phe Val Ile Phe Ala Cys Thr Lys Thr Asn Arg Met  
 1 5 10 15  
 Met Glu His Pro Leu Asn Gln Phe Lys Tyr Cys Pro Lys Cys Gly Ser  
 20 25 30  
 Ala Ala Phe Glu Ile His Asn Glu Lys Ser Lys Gln Cys Thr Asp Cys  
 35 40 45  
 Gly Phe Val Tyr Tyr Phe Asn Pro Ser Ser Ala Thr Val Ala Leu Ile  
 50 55 60  
 Leu Asn Glu Lys Asp Glu Leu Leu Val Cys Arg Arg Ala Lys Glu Pro  
 65 70 75 80  
 Ala Lys Gly Thr Leu Asp Leu Pro Gly Gly Phe Ile Asp Met Asn Glu  
 85 90 95  
 Thr Gly Glu Glu Gly Val Ser Arg Glu Val Glu Glu Glu Thr Gly Leu  
 100 105 110  
 Lys Val Lys Lys Ala Thr Tyr Leu Phe Ser Leu Pro Asn Ile Tyr Ile  
 115 120 125  
 Tyr Ser Gly Phe Pro Val His Thr Leu Asp Met Phe Phe Leu Cys Gln  
 130 135 140  
 Val Glu Asp Thr Ser His Phe Glu Ala Met Asp Asp Val Ala Asp Ser  
 145 150 155 160  
 Phe Phe Val Pro Leu Cys Gln Ile Asn Pro Glu Glu Phe Gly Leu Gly  
 165 170 175  
 Ser Ile Lys Lys Gly Leu Lys Arg Phe Leu Lys Glu Arg  
 180 185

<210> 8808  
 <211> 207

<212> PRT  
 <213> B.fragilis

<220>

<221> UNSURE

<222> (199), (200), (201), (202), (205)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8808

Ile	Met	Asn	Ile	Asp	Ile	Lys	Glu	Ala	His	Arg	Arg	Met	Leu	Tyr	Leu
1				5					10					15	
Leu	Gln	Ser	Phe	Asp	Thr	Val	Cys	Lys	Lys	His	Asp	Ile	Asp	Tyr	Trp
			20					25					30		
Leu	Asp	Tyr	Gly	Thr	Leu	Leu	Gly	Ala	Ile	Arg	His	Gln	Gly	Phe	Ile
		35					40					45			
Pro	Trp	Asp	Thr	Asp	Thr	Asp	Val	Gly	Met	Leu	Arg	Ser	Asp	Tyr	Ala
	50					55				60					
Leu	Phe	Leu	Glu	Lys	Gly	Val	Ser	Glu	Leu	Pro	Gln	Asp	Ile	Phe	Phe
65					70					75					80
Gln	Thr	Pro	Glu	Thr	Glu	Pro	Ala	Met	Ala	Pro	Trp	Ser	Trp	Leu	Val
				85					90					95	
Glu	Ala	Arg	Leu	Arg	Asp	Arg	His	Ser	Arg	Tyr	Val	Pro	Asp	Lys	Lys
			100					105					110		
Thr	Pro	Ala	Glu	Pro	Met	Gln	Phe	Gly	Gly	Leu	Gln	Leu	Asp	Leu	Phe
		115					120					125			
Ile	Tyr	Asp	Trp	Asp	Gly	Lys	Tyr	Glu	Asn	Ala	Leu	Ser	Asn	Ser	Phe
	130					135					140				
Glu	Arg	Asn	Leu	Ser	Glu	Ser	Arg	Ile	His	Leu	Arg	Leu	Asp	Glu	Val
145					150					155					160
Glu	Tyr	Leu	Asp	Thr	Ala	Arg	Phe	Glu	Gly	Val	Glu	Phe	Pro	Val	Pro
				165					170					175	
Ser	Gly	Tyr	Asp	Ala	Tyr	Leu	Thr	Arg	Trp	Ser	Ser	Pro	Arg	Gly	Trp
			180					185					190		
Arg	Glu	Ala	Arg	Arg	Gly	Xaa	Xaa	Xaa	Xaa	Tyr	Gly	Xaa	Ser	Pro	
	195					200						205			

<210> 8809

<211> 77

<212> PRT

<213> B.fragilis

<400> 8809

Phe	Thr	Val	Phe	Ala	Asp	Asn	Ala	Ala	Gly	Ala	Ile	Phe	Val	Asp	Lys
1				5					10					15	
Phe	Phe	Leu	Glu	Thr	Ala	Asp	Gly	Ala	Tyr	Phe	Thr	Val	Asp	Pro	Ile
		20					25					30			
Ala	Lys	Ala	Arg	Ile	Arg	Leu	Lys	Lys	Thr	Val	Leu	Phe	Leu	Trp	Ile
	35					40					45				
Ala	Glu	Arg	Ala	Ile	Ile	Ile	Arg	Asn	Gly	Gln	Ala	Ile	Arg	His	Ile
	50				55					60					
Phe	Leu	Ile	Tyr	His	Ile	Val	Gly	Phe	Val	Ile	Asp	Val			
65					70					75					

<210> 8810

<211> 99

<212> PRT

<213> B.fragilis

<400> 8810

His Ile Leu Ile Asn His Leu Arg Ile Met Asn Lys Ala Glu Leu Ile  
 1 5 10 15  
 Asn Ala Met Ala Ala Glu Ser Gly Leu Ser Lys Val Asp Ser Lys Lys  
 20 25 30  
 Ala Leu Glu Ala Phe Phe Ser Ser Val Thr Lys Ala Leu Ser Ala Gly  
 35 40 45  
 Asp Lys Ile Ser Leu Val Gly Phe Gly Thr Phe Ser Val Ala Glu Arg  
 50 55 60  
 Ser Ala Arg Met Gly Ile Asn Pro Ser Thr Lys Lys Ala Ile Glu Ile  
 65 70 75 80  
 Pro Ala Lys Lys Val Ala Lys Phe Lys Pro Gly Ala Glu Leu Thr Asp  
 85 90 95  
 Ala Ile Lys

<210> 8811  
 <211> 426  
 <212> PRT  
 <213> B.fragilis

<400> 8811  
 Met Lys Gln Ile Phe Leu Phe Leu Phe Ile Phe Leu Leu Thr Ser Cys  
 1 5 10 15  
 Ile Ser Gly Gly Ala Lys Gln Asp Gln Ile Lys Val Ile Asp Arg Thr  
 20 25 30  
 Ile Arg Ile Gly Asp Ala Met Glu His Pro Val Pro Met Lys Leu Ser  
 35 40 45  
 Ala Phe Val Asp Ser Ile Thr Tyr Ile Pro Leu Glu Thr Thr Lys Ser  
 50 55 60  
 Tyr Val Lys Asp Lys Met Leu Ile Ser Tyr Val Glu Pro Tyr Trp Val  
 65 70 75 80  
 Val Tyr Pro Gly Ser Leu Phe Asp Lys Glu Gly Arg Phe Val Thr Asn  
 85 90 95  
 Ile Gly Ala Leu Gly Gln Gly Arg Gly Glu Glu Thr Asn Gly Trp Gly  
 100 105 110  
 Tyr Ser Val Phe Tyr Asp Leu Gln Arg Asn Val Phe Tyr Thr Leu Gly  
 115 120 125  
 Asp Lys Ile Ile Glu Phe Asp Ser Asn Arg Lys Phe Thr Gly Lys Glu  
 130 135 140  
 Val Arg Ile Ser Tyr Arg Glu Arg Asn Ala Met Gln Val Ala Gly Gly  
 145 150 155 160  
 Leu Lys Asn Val Val Ala Leu Leu Lys Ala Asp Thr Lys Tyr Leu Leu  
 165 170 175  
 Val Asn Tyr Pro Asp Ser Ile Phe Trp Met Asp Ser Asp Leu Glu Val  
 180 185 190  
 Thr His Asn Thr Arg Ile Ile Pro Asp Ser Leu Phe Leu Asp Pro Pro  
 195 200 205  
 Gly Asp Ala Asn Gly Met Ser Tyr Thr Phe Ser Arg Tyr Lys Asp Thr  
 210 215 220  
 Thr Ile Phe Tyr Asn Cys Phe Thr Asp Ala Ile Tyr Ala Val Thr Asp  
 225 230 235 240  
 Thr Gly Leu Gln Lys Arg Trp Asp Leu Asp Lys Gly Leu Lys Pro  
 245 250 255  
 Asp Asn Arg Cys Phe Leu Asn Glu Leu Asn Arg Leu Tyr Leu Gln Glu  
 260 265 270  
 Met Val Lys Ile Val Arg Ser Ser Ser Gly Asn Glu Asn Val Val Lys  
 275 280 285  
 Ser Lys Ala Glu Asn Ser Glu Leu Ala Gln Leu Ile Asp Asp Lys Lys  
 290 295 300

Trp Val Asn His Ala Tyr Glu Ser Glu Arg Tyr Val Leu Met Ser Trp  
 305 310 315 320  
 Val Asn Leu Lys Ala Phe Ser Gly Trp Arg Gly Leu Lys Glu Glu Ser  
 325 330 335  
 His Leu Ala Phe Tyr Asp Lys Arg Ser Gly Lys Thr Ile Ala Val Ala  
 340 345 350  
 Gly Asp Gly Leu Ile Asp Asp Ile Asp Gly Gly Met Met Phe Tyr Pro  
 355 360 365  
 Ser Leu Gly Val Cys Asp Gly Ala Met Val Tyr Ser Val Trp Pro Phe  
 370 375 380  
 Glu Leu Lys Glu Tyr Ile Gln Glu Lys Lys Ala Lys Gly Glu Ala Val  
 385 390 395 400  
 Ser Asp Arg Leu Ile Ala Leu Ala Asp Ser Leu Asp Asp Glu Gln Asn  
 405 410 415  
 Pro Ile Leu Val Ile Ala His Leu Lys Lys  
 420 425

<210> 8812  
 <211> 100  
 <212> PRT  
 <213> B.fragilis

<400> 8812  
 Phe His Phe Val Lys Phe Thr Ile Cys Pro Val Ser Ser Val Cys Asn  
 1 5 10 15  
 Arg Ile Asn Ser Asp Glu Asp Ser Cys Ser Ala Lys Asn Ala Leu His  
 20 25 30  
 Leu Ala Ser Val Phe Val Tyr Ile Val Ala Val Leu Leu Ile Gly Gly  
 35 40 45  
 Cys Leu Asp Met Ile Phe Leu Asp Pro Ser Val Tyr Leu Ser Pro Val  
 50 55 60  
 Leu Ala Val Cys Phe Leu Ser Ser Ile Gly Ala Phe Ser Phe Ser Val  
 65 70 75 80  
 Cys Asn Gln Pro Leu Ser Ser Pro Ile Gly Ser Leu Ile Tyr Pro Pro  
 85 90 95  
 Phe Leu Val Ser  
 100

<210> 8813  
 <211> 107  
 <212> PRT  
 <213> B.fragilis

<400> 8813  
 Leu Ile Ser Val Ala Tyr Lys Ala Ala Asn Ile Val Phe Phe Ser His  
 1 5 10 15  
 Ser Glu Val Ile Arg Arg Gln Ile Phe Glu Cys Glu Gly Asp Phe Trp  
 20 25 30  
 Asp Ala Ser Thr Asp Ile Gly Gly Ser Ile Val Cys Leu Phe Gly Asn  
 35 40 45  
 Met Ser Asn Glu Thr Ser Gln Phe Ser Phe Phe Arg Leu Ser Gly Gln  
 50 55 60  
 Ala Gly Pro Glu Lys Arg Leu Tyr Phe Val Ser Arg Phe Ile Val Leu  
 65 70 75 80  
 Phe Cys Pro Ala Phe Ile Phe Arg Gln Lys Glu Ser Asp Leu Glu Val  
 85 90 95  
 Asn Ile Pro Gly Ala Leu Gln Gly Gly Glu Phe  
 100 105



<210> 8814  
 <211> 69  
 <212> PRT  
 <213> B.fragilis

<400> 8814  
 Ser Arg Arg Val Arg Val Gly Leu Tyr Gln Lys Arg Val Lys Lys Ile  
 1 5 10 15  
 Pro Glu Arg Glu Val Lys Tyr Ile Lys Thr Ser Thr Phe Val Lys Thr  
 20 25 30  
 Leu Asn Tyr Glu Lys Lys Asp Ile Thr Ile Asp Met Cys Arg Gly Met  
 35 40 45  
 Leu Cys Ala Cys Arg Leu Ala Gly Thr Asn Gln Arg Glu Asn Asn Val  
 50 55 60  
 Ser Arg Lys Ser Val  
 65

<210> 8815  
 <211> 1022  
 <212> PRT  
 <213> B.fragilis

<400> 8815  
 Lys Leu Pro Val Trp Val Phe Pro Ala Ile Met Leu Gln Val Leu Lys  
 1 5 10 15  
 Asp Ser Cys Trp Glu Ile Ser Thr Arg Ser Val Phe Leu Lys Val Arg  
 20 25 30  
 Leu Ser Leu Asp Trp Gln Tyr Leu Pro His Leu Arg Thr Gly Ile Ala  
 35 40 45  
 Arg Ser Ser Leu Pro Leu Leu Leu Leu Ser Leu Phe Thr Ser Leu  
 50 55 60  
 Ser Arg Arg Leu Arg Ala Pro Gln Ser Ala Lys Leu Ser Gly Leu Ala  
 65 70 75 80  
 Gly Glu Ser Val Val Ile Glu Asn Arg Val Tyr Asn Asp Leu Pro  
 85 90 95  
 Ala Ala Ser Asn Ile Tyr Trp Asp Ala Ala Gln Gly Arg Leu Thr Phe  
 100 105 110  
 Asp Asp Val Pro Ser Tyr Val Pro Ala Ala Arg Asn Gln Lys Gln Gly  
 115 120 125  
 Val Tyr Phe Leu Tyr Gly Ser Leu Ile Ala Leu Gln Gly Gly Ser Ser  
 130 135 140  
 Ala Thr Asp Val Cys Gln Leu Asp Ala Ala Glu Val Asn Pro Val Trp  
 145 150 155 160  
 Lys Thr Asn Gln Ser Pro Asn Ile Pro Lys Phe Asn Pro Ala Ser Leu  
 165 170 175  
 Ala Pro Gly Ala Asp Leu Glu Asn Val Leu Thr His Ile His Asn Pro  
 180 185 190  
 Gly Asn Arg Ile Gly Asp Ile Cys Arg Tyr Leu Thr Gln Arg Gly Trp  
 195 200 205  
 Ala Pro Pro Gly Lys Lys Trp Lys Met Pro Val Lys Glu Arg Leu Glu  
 210 215 220  
 Ala Val Leu Asn Ser Ile Tyr Arg Thr Glu Gly Ser Trp Leu Pro Ile  
 225 230 235 240  
 Gly Gly Leu Ala Thr Asp Gly Thr Gly Glu Val Val His Gly Arg Leu  
 245 250 255  
 Ile Lys Asp Arg Phe Tyr Phe Pro Ala Ser Gly Ser Arg Lys Glu Asp  
 260 265 270  
 Gly Thr Phe Ile Glu Gln Pro Gly Val Ser Gly His Tyr Trp Ser Ser  
 275 280 285

Ser Val Ile Ser Gly Ser Ile Gly Trp Gln Pro Ala Ser Leu Trp Phe  
 290 295 300  
 Gln Gly Gly Asp Ala Ala Ile Gln Ala Thr Ala Leu Asp Val Ala Leu  
 305 310 315 320  
 Pro Val Arg Cys Val Val Asp Asn Thr Ser Thr Asp Trp Pro Glu Leu  
 325 330 335  
 Ala Thr Val Thr Tyr Tyr Ala Tyr Pro Pro Gly Gly Ala Thr Leu Thr  
 340 345 350  
 Ser Glu Leu Pro Ala Asn His Phe Val Glu Gln Arg Lys Pro Phe Ala  
 355 360 365  
 Leu Pro Ser Thr Pro Leu Thr Leu Ser Asp Pro Ser Val Ala His Thr  
 370 375 380  
 Gly Trp Gly Asn Asn Leu Gly Leu Gly Glu Asn Thr Thr Ile Asn Thr  
 385 390 395 400  
 Ser Val Gly Ser Phe Tyr Ala Thr Phe Ser Gln Gly Ala Ser Leu Glu  
 405 410 415  
 Tyr Asp Ser Asn Leu Pro Ala Gly Thr Ala Leu Val Ser Gly Thr Val  
 420 425 430  
 Pro Gly Val Tyr Val Ala Ala Gly Gly Thr Ser Ile Lys Leu Ser Thr  
 435 440 445  
 Asn Gln Leu Val Cys Ser Asn Pro Gly Tyr Val His Thr Gly Trp Ser  
 450 455 460  
 Ile Asp Gly Val Tyr His Gly Leu Gly Ala Asn Tyr Val Met His Ala  
 465 470 475 480  
 Ser Gly Ser Arg Lys Ala Phe Ala Val Trp Ser Arg Asp Cys Trp Val  
 485 490 495  
 Glu Tyr Leu Ala Lys Ala Pro Ala Gly Ala Pro Ala Gly Val Thr Val  
 500 505 510  
 Thr Gly Thr Leu Pro Ser Pro Val Lys Val Ala Gln Asn Ser Ser Val  
 515 520 525  
 Thr Leu Ala Thr Glu Ala Gln Gly Leu Gln Val Cys Ser Asp Pro Arg  
 530 535 540  
 Trp Lys His Thr Ala Trp Thr Ala Gly Ala Phe Gly Gly Asn Thr Ile  
 545 550 555 560  
 Val Thr Asn Ala Leu Lys Ile Tyr Pro Glu Trp Thr Arg Tyr Tyr Gln  
 565 570 575  
 Val Thr Tyr Ser Pro Gln Pro Pro Ser Gly Thr Val Pro Gly Tyr Pro  
 580 585 590  
 Arg Ser Glu Ile Val Ala Pro Gly Ser Ser Val Met Leu Pro Val Gln  
 595 600 605  
 Leu His Thr Ser Asp Pro Leu Gln Val His Gln Ala Trp Leu Val Gly  
 610 615 620  
 Gly Gln Glu Lys Ala Pro Gly Thr Ser Val Ile Val Asn Gly Asp Met  
 625 630 635 640  
 Thr Ile Thr Ala Lys Trp Leu Leu Tyr Glu Val Ser Tyr Leu Ala Asn  
 645 650 655  
 Ala Pro Val Gly Thr Thr Ser Val Thr Pro Leu Pro Ala Leu Gln Lys  
 660 665 670  
 Ile Ala Pro Gly Lys Met Val Thr Leu Ser Ala Thr Arg Leu Val Cys  
 675 680 685  
 Ser Asp Pro Ala Trp Ile His Thr Gly Trp Ser Val Gly Gly Val His  
 690 695 700  
 Tyr Ile Leu Gly Ala Asn Ile Pro Val Leu Ser Asn Met Gln Val Ser  
 705 710 715 720  
 Ala Glu Trp Thr Lys Arg Phe Lys Ile Lys Tyr His Leu Asn Leu Pro  
 725 730 735  
 Ser Gly Thr Gly His Ala Gly Asp Met Leu Pro Glu Asp Glu Tyr Val  
 740 745 750  
 Met Pro Gly Gln Asn Val Thr Leu Ala Val Pro Arg Leu Lys Cys Ser

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755	760	765
Asn Glu Asp Phe Phe Phe Thr Gly Trp Met Ile Asn Gly Gln Phe Tyr		
770	775	780
Gly Leu Gly Ser Ser Tyr Thr Pro Leu Pro Gly Gln Asp Thr Asp Val		
785	790	795
Tyr Ala Val Trp Lys Tyr Ala Gln Ala Met Glu Phe Asn Val Thr Val		
	805	810
Ser Asn Ser Gly Arg Gly Thr Asp Asn Ala Thr Leu Val Phe Thr Asp		
	820	825
Ser Lys Glu Thr Gly Ala Phe Gln Ser Arg Gly Val Val Ala		
	835	840
Trp Ser Asn Thr Gly Ser Pro Val Thr Trp Phe Asp Pro Val Ser Thr		
	850	855
Gly Arg Thr Trp Ser Ser Asn Trp Met Ala Phe Ala Ser Glu Glu Leu		
865	870	875
His Thr Tyr Ala Asn Leu Arg Asn Gly Gly Gly Asp Pro Cys Arg Leu		
	885	890
Ile Gly Tyr Ser Gln Lys Tyr Val Ser Thr Gln Ile Ser Lys Gly Glu		
	900	905
Leu Pro Asp Asn Arg Thr Trp Arg Leu Pro Lys Gly Arg Glu Tyr Met		
	915	920
Gln Tyr Gly Phe Thr Pro Glu Asn Thr Val Gly Ser Trp Ala Asn Gly		
	930	935
Trp Thr Phe Asn Asn Gly Lys Phe Leu Pro Ala Ser Gly Met Arg Ser		
945	950	955
Val Ala Asp Gly Gln Leu Arg Glu Ser Gly Val Gly Tyr Tyr Trp Leu		
	965	970
Ser Asp His Phe Ala Ile Ile Asp His Phe Gly Lys Gln Tyr Met Gly		
	980	985
Arg Gly Ser Lys Val Ser Ser Asp Lys Val Ile Glu Glu Gly Val Val		
	995	1000
Tyr His Ser Ala Ala Gly Phe Gln Ile Arg Cys Val Arg Gln		
	1010	1015
		1020

&lt;210&gt; 8816

&lt;211&gt; 233

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8816

Lys Arg Leu Ser Glu Asn Asn Asn Leu Ser Leu Pro Ile Leu Asn Met	
1	5
Lys Ile Asn Tyr Thr Tyr Met Met Arg Tyr Ser Val Ile Ile Pro Val	
	20
Tyr Asn Arg Pro Asp Glu Val Asp Glu Leu Leu Gln Ser Leu Thr Ala	
	35
Gln His Phe Lys Asp Phe Glu Val Val Val Val Glu Asp Gly Ser Ser	
	50
Val Pro Cys Glu Lys Ile Val Asn Gln Tyr Gln Gly Lys Leu Asp Ile	
65	70
His Tyr Tyr Asn Lys Pro Asn Ser Gly Pro Gly Gln Thr Arg Asn Tyr	
	85
Gly Ala Glu Arg Ser Asn Gly Glu Tyr Leu Ile Ile Leu Asp Ser Asp	
	100
Cys Ile Leu Pro Glu Gly Tyr Leu Asp Ala Val Glu Lys Glu Leu Gln	
	115
Thr Ala Pro Ala Asp Ala Phe Gly Gly Pro Asp Arg Ala His Ser Ser	
	130
Phe Thr Asp Ile Gln Lys Ala Ile Asn Tyr Ser Met Thr Ser Phe Phe	
	135
	140

145 150 155 160  
 Thr Thr Gly Gly Ile Arg Gly Gly Lys Lys Lys Met Asp Lys Phe Tyr  
 165 170 175  
 Pro Arg Ser Phe Asn Met Gly Val Pro Pro Gly Gly Leu Ser Gly Ile  
 180 185 190  
 Arg Thr Phe Leu Gln Tyr Ala Phe Arg Arg Thr His Arg Phe Gln Tyr  
 195 200 205  
 Pro His Ile Gln Gly Arg Ile Pro Met Pro Ser Leu Ser Arg Cys Leu  
 210 215 220  
 Gly Val Pro Gln Thr Thr Tyr Gly Phe  
 225 230

<210> 8817  
 <211> 254  
 <212> PRT  
 <213> B.fragilis

<400> 8817

Pro Val Leu Ser Leu Gly Asn Ala Glu Met Glu Arg Leu Arg Met Thr  
 1 5 10 15  
 Thr Lys Thr Gly Gln Ala Glu Trp Arg Ala Leu Asp Glu Asn Gln Lys  
 20 25 30  
 Met Arg Glu Leu Pro Leu Ala Ile Glu Leu Gln Asp Phe Thr Ile Asp  
 35 40 45  
 Glu Tyr Pro Pro Lys Leu Met Leu Ile Asn Asn Glu Thr Gly Glu Ala  
 50 55 60  
 Leu Pro Ser Lys Lys Pro Glu Asn Leu Leu Ile Glu Asp Asn Phe His  
 65 70 75 80  
 Thr Gly Arg Leu Leu Asp Trp Glu Ile Gly Ile Glu Lys Lys Ile Pro  
 85 90 95  
 Leu Ala Ala Ser Val Ala Thr Gln Asp Thr Leu Asn Phe Val Glu Phe  
 100 105 110  
 His Ser Met Gly Ala Thr Tyr Ala Val Tyr Leu Lys Ala Val Asn Asn  
 115 120 125  
 Lys Thr Gly Gln Gln Arg Glu Gly Trp Val Ser Cys Gly Ser Phe Met  
 130 135 140  
 Phe Pro Tyr Lys Ala Ile Arg Leu Asp Asp Gln Thr Ser Leu Val Met  
 145 150 155 160  
 Pro Glu Arg Glu Pro Arg Arg Phe Ala Ser Glu Val Lys Val Tyr Thr  
 165 170 175  
 Glu Ser Gly Cys Arg Asp Ser Ala Thr Ile Glu Val Asn Lys Pro Phe  
 180 185 190  
 Glu Leu Glu Gly Trp Lys Ile Tyr Gln Leu Ser Tyr Asp Glu Ser Lys  
 195 200 205  
 Gly Arg Trp Ser Asp Ile Ser Val Phe Glu Leu Val Arg Asp Pro Trp  
 210 215 220  
 Leu Pro Val Val Tyr Thr Gly Ile Trp Met Met Ile Ala Gly Ala Val  
 225 230 235 240  
 Cys Leu Phe Ala Leu Ser Gln Lys Arg Lys Glu Asp Asn Thr  
 245 250

<210> 8818  
 <211> 94  
 <212> PRT  
 <213> B.fragilis

<400> 8818

Lys Ser Val Ser Lys Pro Ser Leu Leu Val Phe His Leu Ala Pro Asp  
 1 5 10 15

Thr Val Ile Lys Leu Glu Pro Val Leu Lys Gln Lys Glu Ala Lys Glu  
 20 25 30  
 Ser Ser Phe Thr Ser Ser Tyr Ser Phe Ala Met Ala Asn Thr Tyr Ala  
 35 40 45  
 Phe Thr Pro Leu Tyr Ser Ser Glu Thr Val Ser Phe Leu Arg Pro Leu  
 50 55 60  
 Ala Arg Arg Ala Ala Asn Thr Leu Arg Pro Leu Ala Val Ala Ile Leu  
 65 70 75 80  
 Ser Arg Lys Pro Cys Leu Phe Phe Leu Phe Leu Leu Glu Gly  
 85 90

<210> 8819  
 <211> 627  
 <212> PRT  
 <213> B.fragilis

<400> 8819

Gln Ile Lys Ser Ser Ser Met Asn Arg Arg Leu Ser Ile Phe Val Ile  
 1 5 10 15  
 Ile Leu Phe Phe Leu Leu Pro Val Ala Ala Arg Ala Gln Val Thr Gly  
 20 25 30  
 Ser Phe Arg Phe Ala Gln Leu Thr Asp Ile His Leu Asn Pro Asn Asn  
 35 40 45  
 Pro Lys Pro Thr Glu Asp Leu Lys Arg Ser Val Glu Gln Ile Asn Ala  
 50 55 60  
 Thr Pro Gly Val Asp Phe Val Leu Val Thr Gly Asp Leu Thr Glu Glu  
 65 70 75 80  
 Gly Asp Arg Thr Thr Met Leu Val Val Lys Ser Ile Leu Asp Arg Leu  
 85 90 95  
 Lys Val Lys Tyr Tyr Val Ile Pro Gly Asn His Glu Thr Lys Trp Ser  
 100 105 110  
 Asp Ser Gly Cys Thr Ala Phe Ser Glu Ile Phe Gly Gly Glu Arg Phe  
 115 120 125  
 Lys Phe Glu His Lys Gly Phe Leu Phe Leu Gly Phe Asn Ser Gly Pro  
 130 135 140  
 Leu Met Arg Met Ala Tyr Gly His Val Val Pro Gln Asp Ile Thr Trp  
 145 150 155 160  
 Met Lys Gln Glu Met Asp Lys Val Gly Lys Asp Lys Pro Val Ile Leu  
 165 170 175  
 Val Thr His Tyr Pro Met Gln Asp Gly Asp Val Asp Asn Trp Tyr Asp  
 180 185 190  
 Val Thr Asp Ala Val Arg Pro Tyr Asn Ile Arg Thr Phe Ile Gly Gly  
 195 200 205  
 His Tyr His Arg Asn Arg Phe Leu Ser Tyr Asp Gly Ile Pro Gly Ile  
 210 215 220  
 Leu Thr Arg Ser Asn Leu Arg Asp Lys Asn Gly Ser Ser Gly Tyr Ser  
 225 230 235 240  
 Ile Phe Asp Ile Thr Pro Asp Ser Ile Ile Thr Tyr Glu Gln Arg Ile  
 245 250 255  
 Asp Glu Pro Met Lys Arg Trp Thr Ala Leu Ser Leu Thr Lys Ser Tyr  
 260 265 270  
 Tyr Asn Arg Thr Gly Lys Ala Val Lys Tyr Pro Ser Phe Ser Val Asn  
 275 280 285  
 Lys Glu Tyr Pro Gln Val Lys Ile Gly Trp Gln Val Gln Thr Gly Val  
 290 295 300  
 Gly Ile Tyr Cys Ser Pro Ala Leu Trp Lys Gly Arg Val Tyr Val Gly  
 305 310 315 320  
 Asp Asp Leu Gly Phe Leu Thr Cys Tyr Thr Leu Lys Glu Gly Arg Lys  
 325 330 335

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Leu Trp Ser Phe Glu Ser Gly Lys Arg Ile Val Gly Thr Pro Ala Ala  
 340 345 350  
 Thr Asp Gly Ile Val Val Phe Gly Ser Ala Asp His Asn Ile Tyr Gly  
 355 360 365  
 Leu Asp Ala Val Thr Gly Lys Glu Arg Trp Arg Val Thr Val Ala Gln  
 370 375 380  
 Pro Val Leu Gly Ala Val Thr Ile Glu Lys Gly Ile Ala Tyr Ile Gly  
 385 390 395 400  
 Gly Ser Asp Ser Thr Phe Arg Ala Ile Arg Ile Lys Asn Gly Lys Val  
 405 410 415  
 Val Trp Thr Tyr Thr Gly Ile Lys Gly Tyr Ile Glu Thr Lys Pro Leu  
 420 425 430  
 Val Glu Gly Asp Lys Val Ile Phe Gly Ala Trp Asp Asn Thr Leu Tyr  
 435 440 445  
 Ala Leu Asn Lys Ser Asn Gly Lys Glu Leu Trp Lys Trp Thr Gly Gly  
 450 455 460  
 Leu Thr Arg Met His Phe Ser Pro Ala Ala Val Trp Pro Val Ala Ala  
 465 470 475 480  
 His Gly Lys Val Phe Ile Thr Asp Pro Gln Arg Ala Met Thr Ala Ile  
 485 490 495  
 Ser Leu Lys Thr Gly Lys Thr Val Trp Arg Thr Phe Gln Ser Met Val  
 500 505 510  
 Arg Glu Thr Ile Gly Leu Ser Ala Asn Lys Asn Gln Ile Tyr Ser Lys  
 515 520 525  
 Thr Met Asn Asp Ser Val Val Cys Tyr Ser Thr Ile Ser Asp Thr Pro  
 530 535 540  
 Lys Glu Ile Trp Ala Ser Asn Val Gly Phe Gly Tyr Glu His Ala Pro  
 545 550 555 560  
 Ser Met Gln Met Glu Lys Asp Gly Ile Val Phe Ser Ser Thr Lys Glu  
 565 570 575  
 Gly Leu Ile Phe Ala Leu Asp Ala Ser Thr Gly Gln Val Leu Trp Lys  
 580 585 590  
 His Lys Ile Gly Asn Ser Leu Ile Asn Thr Val Leu Pro Ile Ser Arg  
 595 600 605  
 His Gln Val Leu Phe Thr Ala Thr Ser Gly Glu Thr Gly Leu Leu Glu  
 610 615 620  
 Trp Lys Glu  
 625

&lt;210&gt; 8820

&lt;211&gt; 307

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8820

Lys Asn Phe Pro Ile Lys Thr Asn Gln Ile Thr Lys Asn Ile Ile Tyr  
 1 5 10 15  
 Leu Tyr Pro Asn Gln Lys Gly Cys Glu Met Lys Leu Ile Ala Glu Ser  
 20 25 30  
 Gly Ser Thr Arg Thr Glu Trp Ala Leu Val Glu Asp Asn His Leu Val  
 35 40 45  
 Gln Arg Val Phe Thr Glu Gly Leu Asn Pro Phe Phe Gln Thr Arg Arg  
 50 55 60  
 Glu Ile Ser Arg Ser Val Arg Leu Gly Leu Pro Glu Ser Phe Phe Lys  
 65 70 75 80  
 Lys Lys Leu Asp Gln Val Tyr Tyr Tyr Gly Ala Gly Cys Ser Ser Tyr  
 85 90 95  
 Glu Lys Lys Asn Ile Leu Gly Ala Ser Leu Val Ala Gln Phe Lys Thr  
 100 105 110

Pro Ile Gln Val Glu Ser Asp Leu Leu Ala Ala Ala Arg Gly Leu Phe  
 115 120 125  
 Lys Cys Glu Ala Gly Ile Ala Cys Ile Leu Gly Thr Gly Ser Asn Ser  
 130 135 140  
 Cys Phe Tyr Asp Gly Lys Ile Ile Val Lys Asn Val Lys Ala Ala Gly  
 145 150 155 160  
 Tyr Ile Leu Gly Asp Glu Gly Ser Gly Ala Val Leu Gly Lys Leu Phe  
 165 170 175  
 Leu Ala Asp Leu Leu Lys Gly Leu Ala Pro Lys Glu Leu Ala Asn Glu  
 180 185 190  
 Phe His Glu Lys Phe Arg Ile Ser Val Asn Asp Val Met Glu Ser Val  
 195 200 205  
 Tyr Asn Leu Pro Phe Pro Asn Arg Phe Leu Gly Thr Ile Ala Tyr Phe  
 210 215 220  
 Leu Gly Asp Tyr Met Asp Asn Glu Tyr Val Tyr Asn Leu Leu Thr Asn  
 225 230 235 240  
 Asn Leu Arg Ser Phe Phe Asn Arg Asn Val Cys Gln Tyr Asp Tyr Ile  
 245 250 255  
 Asn Tyr Pro Ile Arg Phe Val Gly Ser Leu Ala Tyr Ala Tyr Pro Asp  
 260 265 270  
 Ile Leu Gln Glu Val Ala Gln Glu Phe Gly Val Glu Ile Asp Val Ile  
 275 280 285  
 Glu Glu Thr Pro Met Asn Gly Leu Ile Glu Phe His Ser Met Asn Ile  
 290 295 300  
 Glu Glu Ser  
 305

&lt;210&gt; 8821

&lt;211&gt; 258

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8821

Tyr Phe Ser Pro Val Phe Phe Glu Phe Gly Ile Lys Asp Phe Ile Asp  
 1 5 10 15  
 Ile Leu Leu Val Ala Phe Leu Leu Tyr Tyr Thr Tyr Lys Leu Met Lys  
 20 25 30  
 Ala Ser Gly Ser Ile Asn Val Phe Thr Gly Ile Leu Val Phe Ile Leu  
 35 40 45  
 Ile Trp Leu Val Val Ser Gln Val Leu Glu Met Lys Leu Leu Gly Ser  
 50 55 60  
 Ile Phe Asp Lys Leu Val Ser Val Gly Val Leu Ala Leu Ile Val Leu  
 65 70 75 80  
 Phe Gln Asp Glu Ile Arg Arg Phe Leu Leu Thr Leu Gly Ser His Gln  
 85 90 95  
 His Ala Ser Ala Leu Val Arg Phe Leu Thr Gly Asn Lys Lys Glu Lys  
 100 105 110  
 Leu Gln His Asp Asp Ile Met Pro Ile Val Met Ala Cys Ile Ser Met  
 115 120 125  
 Gly Lys Gln Lys Val Gly Ala Leu Ile Val Met Glu Arg Asn Val Pro  
 130 135 140  
 Leu Asp Asp Val Ile Arg Thr Gly Glu Ile Ile Asp Ala Asn Ile Asn  
 145 150 155 160  
 Gln Arg Leu Ile Glu Asn Ile Phe Phe Lys Asn Ser Pro Leu His Asp  
 165 170 175  
 Gly Ala Met Val Ile Ser Lys Lys Arg Ile Lys Ala Ala Gly Cys Ile  
 180 185 190  
 Leu Pro Val Ser His Asn Leu Asp Ile Pro Lys Glu Leu Gly Leu Arg  
 195 200 205

His Arg Ala Ala Met Gly Ile Ser Gln Val Ser Asp Ala Leu Ala Ile  
 210 215 220  
 Ile Val Ser Glu Glu Thr Gly Ala Ile Ser Val Ala Trp Arg Gly Gln  
 225 230 235 240  
 Phe Tyr Leu Arg Gln Ser Ala Glu Glu Leu Glu Ser Leu Leu Thr Lys  
 245 250 255  
 Glu Ser

<210> 8822  
 <211> 157  
 <212> PRT  
 <213> B.fragilis

<400> 8822  
 Ser Ile Ser Phe Thr Phe Ser Leu Phe Phe Cys Ser Ser Pro Leu Leu  
 1 5 10 15  
 Asn Lys Asn Leu Arg Ala Leu Leu Val Ala Thr Leu Thr Leu Phe Phe  
 20 25 30  
 Ile Thr Leu Gln Arg Phe Gln Lys Ser Ile Gly Asn Ser Met Ile Arg  
 35 40 45  
 Gln Cys Ala Ile Leu Phe Gly Cys Leu Ala Leu Gly Glu Leu Ile Val  
 50 55 60  
 Tyr Leu Thr Gly Ile Lys Leu Pro Ser Ser Ile Ile Gly Met Leu Leu  
 65 70 75 80  
 Leu Thr Leu Phe Leu Lys Leu Gly Trp Ile Lys Leu His Trp Val Gln  
 85 90 95  
 Gly Met Ser Asp Phe Leu Val Ala Asn Leu Gly Phe Phe Phe Ile Pro  
 100 105 110  
 Pro Gly Val Ala Leu Met Leu Tyr Phe Asp Ile Ile Ala Ala Gln Phe  
 115 120 125  
 Trp Pro Ile Val Ile Ala Thr Leu Val Ser Thr Leu Leu Val Leu Val  
 130 135 140  
 Ile Thr Gly Trp Val His Gln Leu Thr Arg Lys Leu Lys  
 145 150 155

<210> 8823  
 <211> 633  
 <212> PRT  
 <213> B.fragilis

<400> 8823  
 Pro Thr Ile Pro Leu Ser Met Glu Asn Lys Ile Asn Phe Ser Pro Pro  
 1 5 10 15  
 Ser Thr Arg Glu Gly Lys Gly Val Arg Phe Leu Leu Thr Thr Phe Ser  
 20 25 30  
 Ile Leu Leu Cys Ser Leu Gln Ala Val Ala Gln Ser Leu Pro Arg Val  
 35 40 45  
 Ala Pro Glu Gln Val Gly Met Asp Ser His Arg Leu Leu His Ala Asp  
 50 55 60  
 Glu Ala Ile His Arg Ala Ile Asp His Lys Glu Ile Pro Gly Ala Val  
 65 70 75 80  
 Leu Ala Val Ile Arg His Gly Lys Met Ala Tyr Leu Lys Ala Tyr Gly  
 85 90 95  
 Asn Lys Arg Ile Tyr Pro Asn Val Glu Pro Met Glu Ile Asn Thr Val  
 100 105 110  
 Phe Asp Met Ala Ser Cys Ser Lys Ser Met Ser Thr Ala Val Ser Val  
 115 120 125  
 Met Ile Leu Val Glu Arg Gly Gln Leu Arg Leu Leu Asp Arg Val Ser



130	Phe Tyr Leu Pro Asp	135	Phe Gln Glu Trp Arg Gly	140	Glu Asn Gly Glu Lys
145	Lys Asp Ile Arg Ile	150	Ile Asp Leu Met Thr His	155	Thr Ser Gly Leu Pro
	165		170		175
Pro Tyr Ala Pro Val Ser	Glu Leu Gln Glu Lys Tyr Gly		185		190
Pro Lys Gly Leu Ile Glu Tyr	Ile Ser Thr Cys Lys Arg Glu Phe Lys		200		205
	195		210		215
Pro Gln Thr Lys Phe Gln Tyr Ser	Cys Leu Asn Tyr Ile Thr Leu Gln		220		225
His Ile Ile Glu Thr Ile Thr Gly	Gln Ser Leu Arg Asp Phe Ala Lys		230		235
225	Glu Asn Ile Phe Asp Ile Leu Gly Met	230	Gln Tyr Thr Asp Tyr Leu Pro		240
	245		250		255
Thr Ile Gln Gln Gln Asp Gly Lys	Trp Ile Asn Thr Val Ala Cys Pro		260		265
	260		270		275
Trp Met Asp Arg Ile Ala Pro Thr	Glu Lys Gln Lys Asp Gly Ser Val		280		285
Leu Cys Gly Gln Val His Asp Pro	Leu Ala Arg Ile Leu Asn Gly Gly		290		295
	290		300		305
Ile Ser Gly Asn Ala Gly Ile Phe Ser	Asn Ala Asn Asp Ile Gly Ile		310		315
305	Leu Ala Ala Ala Leu Asn Gly Gly	310	Glu Tyr Asn Gly His Arg Ile		320
	325		330		335
Leu Ser Pro Leu Gly Val Lys Thr Met	Cys Thr Val Pro Arg Glu Leu		340		345
	340		350		355
Thr Ala Phe Gly Arg Thr Pro Gly Trp	Asp Ile Phe Ser Pro Tyr Ala		360		365
355	Ser Asn Lys Gly Asp Leu Phe Ser Pro	360	Asn Thr Phe Gly His Thr Gly		370
	370		375		380
Tyr Thr Gly Thr Ser Ile Ile Ile Asp	Pro Asp Asn Asp Thr Ala Val		385		390
	385		395		400
Ile Leu Leu Val Asn Ala Val His Pro	Glu Asp Arg His Ser Ile Val		405		410
	405		415		420
Arg Leu Arg Ser Leu Val Ala Asn Ala	Val Ala Ala Ser Ile Cys Pro		425		430
	420		435		440
Pro Ala Gln Val Tyr Thr Asp His Tyr	Tyr Lys Arg Phe Leu Gln Phe		445		450
	435		455		460
Glu Thr Glu Thr Pro Ile Ser Pro Lys	Asp Ile Val Met Val Gly Asn		465		470
	450		475		480
Ser Leu Thr Glu Asn Gly Gly Asn Trp	Ser Lys Arg Leu Asn Lys Lys		485		490
465	Asn Ile Arg Asn Arg Gly Ile Ile Gly	485	Asp Glu Ala Leu Gly Ile Cys		495
	485		500		505
Gln Arg Leu Phe Gln Ile Leu Pro Gly	Thr Pro Gln Lys Leu Phe Leu		510		515
	500		515		520
Met Ala Gly Ile Asn Asp Val Ser His	Asp Leu Ser Thr Asp Ser Val		525		530
	515		535		540
Val Thr Leu Ile Thr Lys Val Ile Glu	Lys Ile Gln Thr Glu Ser Pro		545		550
	530		555		560
Arg Thr Lys Leu Tyr Ile Gln Ser Leu	Leu Pro Ile Asn Glu Ser Phe		565		570
545	Gly Arg Tyr Lys Thr Met Ile Gly Lys	565	Thr Asp Leu Ile Pro Glu Ile		575
	565		580		585
Asn Arg Lys Leu Glu Ala Leu Ala Lys	Glu Lys Lys Ile Pro Phe Ile		590		595
	580		600		605
His Leu Phe Pro Leu Phe Thr Glu Lys	Asn Ser Asn Val Met Arg Lys		605		

Glu Leu Thr Thr Asp Gly Leu His Leu Thr Glu Glu Gly Tyr Arg Ile  
 610 615 620  
 Trp Ser Lys Ala Leu Lys Arg Tyr Leu  
 625 630

<210> 8824  
 <211> 110  
 <212> PRT  
 <213> B.fragilis

<400> 8824  
 Leu Cys Gln Pro His Ala Leu Ser Gly Gln Cys His His His Arg Arg  
 1 5 10 15  
 Pro Lys Pro Glu Arg Phe Gly Tyr Ala Phe Tyr Phe Arg Thr Ala Gln  
 20 25 30  
 Arg Met Glu Arg Pro Phe Phe Ser Arg Pro His Phe Asp Ala Glu Met  
 35 40 45  
 Asn Thr Met Ser Leu Ala Phe Glu Pro Asp Phe Lys Ala Ile Phe Phe  
 50 55 60  
 Pro Lys Ile Asp Phe Glu Gly Lys Ile Pro Leu Phe Lys Arg Ala Arg  
 65 70 75 80  
 Lys Pro Leu Lys Asp Lys Ile Phe Ser Pro Lys Val Pro Lys Ser Gln  
 85 90 95  
 Asp Lys Phe Phe Ser His Val Gly Val Leu Thr Pro Phe  
 100 105 110

<210> 8825  
 <211> 82  
 <212> PRT  
 <213> B.fragilis

<400> 8825  
 Phe Gln Gln Phe Val Gly Leu Phe Leu Glu Glu Glu Val Leu Leu His  
 1 5 10 15  
 Arg His Phe Arg Ala Leu Glu Gln Glu Met Glu Val His Asn Ser Glu  
 20 25 30  
 Tyr Lys Gly Pro Leu Gln Ser Glu Arg Phe Val His Val Ala Ile Pro  
 35 40 45  
 Ser Glu Pro Ile Trp Ile Arg Asn Lys Ser Arg Asp Phe Ala Ile Glu  
 50 55 60  
 Gln Cys Asp Gly Phe Ala Ile Arg Leu Trp Gly Tyr Lys Glu Gln Ile  
 65 70 75 80  
 Ile Gly

<210> 8826  
 <211> 137  
 <212> PRT  
 <213> B.fragilis

<400> 8826  
 Pro Leu Ile Thr Asn Tyr Met Ser Lys Met Asn Ser Met Leu Met Gly  
 1 5 10 15  
 Ile Cys Phe Leu Leu Ser Ser Leu Phe Ser Cys Gln Gln Ser Lys Gly  
 20 25 30  
 Asp Phe Lys Thr Val Pro Val Lys Glu Phe Ala Ser Leu Ile Glu Asp  
 35 40 45  
 Ala Ser Val Gln Arg Leu Asp Val Arg Thr Met Ala Glu Tyr Ser Glu  
 50 55 60

Gly His Ile Pro Gly Thr Ile Asn Ile Asn Val Leu Asp Asp Ser Phe  
 65 70 75 80  
 Ala Asp Ile Ala Asp Ser Thr Leu Gln Lys Asp Lys Pro Val Ala Leu  
 85 90 95  
 Tyr Cys Arg Ser Gly Lys Arg Ser Lys Lys Ala Ala Ala Ile Leu Ser  
 100 105 110  
 Glu Lys Gly Tyr Lys Val Tyr Glu Leu Asp Lys Gly Phe Asn Ala Trp  
 115 120 125  
 Gln Glu Ala Gly Glu Lys Val Glu Lys  
 130 135

<210> 8827

<211> 307

<212> PRT

<213> B.fragilis

<400> 8827

Thr Gly Ala Thr Glu Ile Lys Met Trp Lys Asp Phe Phe Tyr Phe Thr  
 1 5 10 15  
 Arg Ala Glu Arg Gln Gly Ile Leu Ile Leu Ala Val Leu Cys Ile Leu  
 20 25 30  
 Val Phe Val Ala Gly Trp Leu Ile Pro Val Lys Glu Asn Thr Ala Lys  
 35 40 45  
 Asn Asn Thr Glu Lys Phe Lys Lys Glu Tyr Ala Gly Phe Met Ser Ser  
 50 55 60  
 Ile Arg Glu Lys Glu Gln Lys Ile Tyr Ser His Asn Asn Arg Phe Gln  
 65 70 75 80  
 Pro Pro Arg Thr Val Arg Leu Thr Thr Phe Asp Pro Asn Ile Thr Asp  
 85 90 95  
 Ser Val Gly Phe Leu Asp Leu Gly Leu Pro Ala Trp Met Ala Lys Asn  
 100 105 110  
 Ile Leu Lys Tyr Arg Asn Lys Gly Gly Lys Phe Arg Arg Ala Glu Asp  
 115 120 125  
 Phe Arg Lys Val Tyr Gly Leu Thr Gln Glu Gln Tyr Glu Met Leu Leu  
 130 135 140  
 Pro Tyr Ile His Ile Ala Thr Leu Ala Lys Pro Lys Asp Thr Leu Arg  
 145 150 155 160  
 Leu Tyr Thr Arg Lys Ile Glu Glu Asp Thr Leu Lys Phe Phe Lys Tyr  
 165 170 175  
 Ala Ala Gly Thr Val Val Glu Leu Asn Ser Ala Asp Thr Thr Glu Leu  
 180 185 190  
 Lys Lys Ile Pro Gly Ile Gly Ser Gly Ile Ala Arg Met Ile Thr Gly  
 195 200 205  
 Tyr Arg Asn Arg Leu Gly Gly Phe Tyr Asp Ile Ala Gln Leu Lys Glu  
 210 215 220  
 Ile His Leu Asp Val Glu Lys Leu Arg Pro Trp Phe Asn Val Ala Thr  
 225 230 235 240  
 Gly Asn Thr Arg Arg Leu Asn Ile Asn Arg Thr Gly Ile Glu Arg Leu  
 245 250 255  
 Lys Ala His Pro Tyr Ile Asn Phe Tyr Gln Ala Lys Ile Ile Val Glu  
 260 265 270  
 Tyr Arg Lys Lys Lys Gly Ile Leu Lys Ser Leu Lys Gln Leu Ser Leu  
 275 280 285  
 Tyr Glu Glu Phe Thr Pro Gln Asp Leu Glu Arg Ile Ser His Tyr Ile  
 290 295 300  
 Cys Phe Glu  
 305

<210> 8828

<211> 391  
 <212> PRT  
 <213> B.fragilis

<400> 8828

Ile	Lys	Asn	Thr	Met	Asn	Gln	Thr	Val	Asn	Lys	Arg	Leu	Leu	Ala	Leu
1			5						10					15	
Asp	Val	Leu	Arg	Gly	Ile	Thr	Ile	Ala	Gly	Met	Ile	Met	Val	Asn	Asn
		20						25					30		
Pro	Gly	Ser	Trp	Ser	Tyr	Val	Tyr	Ala	Pro	Leu	Gly	His	Ala	Ala	Trp
		35					40					45			
Ile	Gly	Leu	Thr	Pro	Thr	Asp	Leu	Val	Phe	Pro	Phe	Phe	Met	Phe	Ile
	50					55					60				
Met	Gly	Ile	Ser	Thr	Tyr	Ile	Ser	Leu	Arg	Lys	Tyr	Asn	Phe	Glu	Phe
65					70					75				80	
Ser	His	Ser	Ala	Ala	Leu	Lys	Ile	Leu	Lys	Arg	Thr	Ile	Val	Ile	Phe
			85						90					95	
Ala	Ile	Gly	Leu	Gly	Ile	Ala	Trp	Phe	Ser	Met	Phe	Cys	Arg	Thr	Trp
			100					105					110		
Asn	Ser	Leu	Ser	Gly	Glu	Asp	Ile	Ser	Phe	Phe	Ser	Arg	Leu	Tyr	Glu
		115					120					125			
Ser	Val	Trp	Thr	Phe	Gly	His	Ile	Arg	Ile	Leu	Gly	Val	Met	Gln	Arg
	130					135					140				
Leu	Ala	Leu	Cys	Tyr	Gly	Ala	Thr	Ala	Ile	Ile	Ala	Leu	Ile	Met	Lys
145					150					155					160
His	Lys	Tyr	Ile	Pro	Tyr	Leu	Ile	Ala	Ile	Leu	Leu	Ile	Gly	Tyr	Phe
				165					170					175	
Ile	Ile	Leu	Ile	Asn	Gly	Asn	Gly	Phe	Glu	Tyr	Asn	Ser	Ser	Asn	Ile
			180					185					190		
Leu	Ser	Ile	Val	Asp	Arg	Thr	Val	Leu	Gly	Glu	Ala	His	Met	Tyr	Lys
		195					200					205			
Asp	Asn	Gly	Ile	Asp	Pro	Glu	Gly	Leu	Leu	Ser	Thr	Ile	Pro	Ser	Ile
	210					215					220				
Ala	His	Val	Leu	Ile	Gly	Phe	Cys	Val	Gly	Lys	Leu	Leu	Met	Glu	Val
225					230					235				240	
Lys	Asp	Ile	His	Glu	Lys	Ile	Glu	Arg	Leu	Phe	Leu	Ile	Gly	Thr	Ile
				245					250					255	
Leu	Thr	Phe	Ala	Gly	Phe	Leu	Leu	Ser	Tyr	Gly	Cys	Pro	Ile	Ser	Lys
		260						265					270		
Lys	Ile	Trp	Ser	Pro	Thr	Phe	Ala	Ile	Val	Thr	Cys	Gly	Leu	Ala	Ser
		275					280					285			
Ser	Phe	Leu	Ala	Leu	Leu	Val	Trp	Ile	Ile	Asp	Val	Arg	Gly	Tyr	Thr
	290					295					300				
Arg	Trp	Ser	Arg	Phe	Phe	Glu	Ser	Phe	Gly	Val	Asn	Pro	Leu	Phe	Ile
305					310					315				320	
Tyr	Val	Met	Gly	Ala	Val	Leu	Ser	Ile	Leu	Leu	Gly	Ser	Ile	Leu	Ile
				325					330					335	
Pro	Tyr	Asp	Gly	Gly	Ser	Ile	Ser	Leu	His	Gly	Phe	Val	Tyr	Asn	Ala
			340					345					350		
Ile	Leu	Gln	Pro	Val	Leu	Gly	Asp	Tyr	Pro	Gly	Ser	Leu	Ala	Phe	Ala
		355					360					365			
Ile	Leu	Phe	Val	Gly	Leu	Asn	Trp	Cys	Ile	Gly	Tyr	Ile	Leu	Tyr	Lys
	370					375					380				
Lys	Lys	Ile	Tyr	Ile	Lys	Ile									
385					390										

<210> 8829  
 <211> 237  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8829

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Arg Ile Leu Thr Thr Lys Asn Arg Ile Asp Met Lys Lys Ser Leu Leu
1      5      10      15
Ile Ser Val Phe Ala Thr Leu Ala Met Ile Ser Leu Asn Ala Leu
20      25      30
Ala Gln Glu Lys Ala Thr Gly Lys Ala Tyr Lys Ala Ile Gln Lys Asp
35      40      45
Glu Lys Val Ile Asn Lys Asp Leu Gln Lys Lys Ala Ile Lys Glu Ala
50      55      60
Arg Lys Gln Ala Lys Glu Leu Thr Lys Glu Gly Phe Lys Thr Pro Val
65      70      75      80
Gly Lys Leu Pro Leu Asp Lys Gln Leu Glu Asn Ser Trp Glu Lys Gln
85      90      95
Met Glu Ile Asp Met Asn Gly Asn Pro Tyr Trp Tyr Ile Ala Thr Ser
100     105     110
Arg Val Ile Gly Gly Asn Gln Ser Ala Ala Ala Met Gln Ala Thr Asn
115     120     125
Thr Ala Lys Ile Asp Ile Ala Gly Gln Val Gln Thr Lys Val Thr Gln
130     135     140
Leu Ile Glu Ser Lys Val Ala Asn Asp Asp Met Gly Gln Glu Glu Ala
145     150     155     160
Ala Ser Leu Ser Ser Ala Val Ala Ala Gly Lys Ser Ile Ile Ser Gly
165     170     175
Thr Leu Gly Arg Thr Ile Pro Leu Val Glu Val Tyr Arg Thr Leu Pro
180     185     190
Asn Lys Asn Val Glu Val Met Val Thr Ile Gly Tyr Ser Leu Glu Ala
195     200     205
Ala Asn Lys Val Ala Val Lys Ala Leu Ser Glu Glu Leu Ala Lys Lys
210     215     220
Ser Pro Glu Leu Ala Lys Glu Leu Asp Lys Leu Ala Gln
225     230     235

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&lt;210&gt; 8830

&lt;211&gt; 399

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8830

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Leu Pro Val Thr Arg Cys Ser Ser Leu Val Val Tyr Lys Arg Ile Lys
1      5      10      15
Ala Met Asn Thr Thr Glu Phe Asp Glu Ile Arg Pro Tyr Asn Asp Glu
20      25      30
Glu Leu Ser Gly Val Phe Glu Glu Leu Ile Ala Asp Pro Ala Phe Gln
35      40      45
Lys Val Val Ala Gly Val Ile Pro Asp Val Pro Phe Glu Met Leu Ala
50      55      60
Gln Lys Met Arg Ala Cys Arg Thr Lys Leu Glu Phe Gln Lys Thr Phe
65      70      75      80
Cys Tyr Gly Leu Leu Trp Lys Leu Ala Gly Asp Cys Thr Asp Gly Ile
85      90      95
Ser Leu Asp His Thr Ala Ile Pro Asp Lys Ser Lys Ala Tyr Thr Tyr
100     105     110
Ile Ser Asn His Arg Asp Ile Ile Leu Asp Ser Gly Phe Leu Ser Val
115     120     125
Leu Leu Val Asp Gln Gly Met Asp Thr Val Glu Ile Ala Ile Gly Asp
130     135     140
Asn Leu Leu Ile Tyr Pro Trp Ile Lys Lys Phe Val Arg Val Asn Lys

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145 150 155 160  
 Ser Phe Ile Val Gln Arg Ala Leu Thr Met Arg Gln Met Leu Glu Ser  
 165 170 175  
 Ser Ala Arg Met Ser Arg Tyr Met His Tyr Ala Ile Gly Glu Lys Asn  
 180 185 190  
 Gln Ser Ile Trp Ile Ala Gln Arg Glu Gly Arg Ala Lys Asp Ser Asn  
 195 200 205  
 Asp Arg Thr Gln Asp Ser Val Leu Lys Met Leu Ala Met Gly Gly Glu  
 210 215 220  
 Gly Asp Val Val Ser Arg Leu Met Glu Met Asn Ile Ala Pro Leu Ala  
 225 230 235 240  
 Ile Ser Tyr Glu Tyr Asp Pro Cys Asp Tyr Leu Lys Ala Gln Glu Phe  
 245 250 255  
 Gln Leu Lys Arg Asp Ile Glu Gly Tyr Lys Lys Thr Met Ala Asp Asp  
 260 265 270  
 Leu Lys Asn Met Gln Thr Gly Leu Phe Gly Tyr Lys Gly Arg Val His  
 275 280 285  
 Phe Gln Thr Gly Ala Cys Leu Asn Asp Leu Leu Ser Thr Val Asp Arg  
 290 295 300  
 Ser Leu Pro Lys Pro Glu Leu Phe Ala Arg Ile Ser Thr Trp Ile Asp  
 305 310 315 320  
 Gln Arg Ile His Ser Asn Tyr Arg Leu Tyr Pro Gly Asn Tyr Val Ala  
 325 330 335  
 His Asp Leu Leu Thr Gly Lys Asn Asp Phe Glu Ser His Tyr Thr Leu  
 340 345 350  
 Ala Glu Lys Glu Arg Phe Glu Ala Tyr Val Glu Lys Gln Leu Glu Lys  
 355 360 365  
 Ile Glu Ile Pro Asn Lys Asp Ile Ser Phe Leu Arg Glu Lys Leu Leu  
 370 375 380  
 Leu Met Tyr Ala Asn Pro Leu Thr Asn Tyr Leu Ala Ala Arg Gln  
 385 390 395

&lt;210&gt; 8831

&lt;211&gt; 295

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8831

Ser Met Val Ala Gly Arg Leu Tyr Arg Tyr Leu Asp Asp Asp Ser Gly  
 1 5 10 15  
 Ser Cys Leu Pro Val Cys Leu Val Thr Glu Lys Lys Gly Gly Gln His  
 20 25 30  
 Met Ser Trp Asp Gln Phe Val Ile Phe Ala Ile Val Ala Leu Leu Cys  
 35 40 45  
 Trp Gly Ile Gly Ala Val Ala Ala Trp Arg Gly Lys Arg Gln Trp Met  
 50 55 60  
 Val Tyr Thr Ala Thr Leu Ala Gly Leu Ala Val Phe Phe Ala Phe Ile  
 65 70 75 80  
 Leu Gly Met Trp Ile Ser Leu Glu Arg Pro Pro Met Arg Thr Met Gly  
 85 90 95  
 Glu Thr Arg Leu Trp Tyr Ser Phe Phe Leu Pro Leu Ala Gly Ile Ile  
 100 105 110  
 Thr Tyr Ser Arg Trp Arg Tyr Lys Trp Ile Leu Ser Phe Ser Phe Ile  
 115 120 125  
 Leu Ser Leu Val Phe Val Cys Ile Asn Leu Phe Lys Pro Glu Ile His  
 130 135 140  
 Asn Lys Thr Leu Met Pro Ala Leu Gln Ser Pro Trp Phe Ala Pro His  
 145 150 155 160  
 Val Ile Val Tyr Met Phe Ala Tyr Ala Met Leu Gly Ala Ala Ala Val

				165					170					175			
Met	Ala	Val	Tyr	Leu	Leu	Trp	Ile	Lys	Lys	Lys	Thr	Pro	Glu	Glu	Arg		
			180					185					190				
Glu	Met	Glu	Leu	Cys	Asp	Asn	Leu	Val	Asn	Val	Gly	Leu	Ala	Phe	Met		
		195					200					205					
Thr	Leu	Gly	Met	Leu	Phe	Gly	Ala	Leu	Trp	Ala	Lys	Glu	Ala	Trp	Gly		
	210					215					220						
His	Tyr	Trp	Ser	Trp	Asp	Pro	Lys	Glu	Thr	Trp	Ala	Ala	Ala	Thr	Trp		
225				230						235					240		
Leu	Gly	Tyr	Leu	Cys	Tyr	Ile	His	Phe	Arg	Met	Asn	Arg	Arg	Gln	Lys		
				245				250						255			
Val	Arg	Thr	Ala	Leu	Val	Gly	Leu	Leu	Ile	Cys	Phe	Val	Leu	Leu	Gln		
			260				265						270				
Met	Cys	Trp	Tyr	Gly	Ile	Asn	Tyr	Leu	Pro	Ser	Ala	Gln	Gly	Thr	Ser		
		275				280						285					
Val	His	Thr	Tyr	Asn	Leu	Asn											
	290					295											

&lt;210&gt; 8832

&lt;211&gt; 71

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8832

Asn	Pro	Ser	Ala	Ala	Ile	Ser	Cys	Val	Ala	Glu	Leu	Asn	Ala	Thr	Ser		
1				5					10					15			
Gln	Lys	Met	Ala	Arg	Val	Val	Trp	Lys	Lys	Phe	Asp	Ile	Gly	Met	Val		
			20					25				30					
Lys	Ala	Ile	Pro	Ala	Ser	Pro	Ala	Pro	Thr	Asn	Ser	Cys	Met	Leu	Thr		
		35				40					45						
Ile	His	Gln	Arg	Leu	Val	Phe	Asn	Lys	Ser	Thr	Asn	Gly	Leu	Gln	Lys		
	50					55					60						
Gly	Leu	Ile	Thr	His	Gly	Lys											
65						70											

&lt;210&gt; 8833

&lt;211&gt; 263

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8833

Asp	Asn	Tyr	Phe	Cys	Phe	Gly	Ile	Glu	Ile	Arg	Ile	Phe	Ala	Pro	Leu		
1				5				10					15				
Phe	Ser	Gln	Phe	Pro	Met	Gln	Lys	Val	Phe	Leu	Phe	Leu	Leu	Leu	Phe		
		20					25					30					
Leu	Leu	Pro	Leu	Ala	Glu	Val	Pro	Asn	His	Ala	Pro	Ala	Ser	Glu	Pro		
		35				40					45						
Val	Ser	Val	Ala	Ser	Thr	Pro	Glu	Thr	Asp	Glu	Ile	Asp	Gln	Leu	Phe		
	50				55					60							
Asp	Asp	Met	Gln	Leu	Asp	Gly	Ile	Val	Ser	Tyr	Thr	Ala	Phe	Arg	Gln		
65				70				75						80			
Ala	Val	Thr	Gly	Tyr	Arg	Lys	Ile	Glu	Gln	Lys	Ser	Lys	Ser	Ile	Met		
			85					90						95			
Thr	Leu	Ile	Asp	Phe	Ser	Lys	Pro	Ser	Thr	Glu	Lys	Arg	Leu	Tyr	Val		
		100					105						110				
Leu	Asp	Met	Lys	Asn	Lys	Lys	Leu	Leu	Tyr	Thr	Ser	Val	Val	Ser	His		
		115				120						125					
Gly	Lys	Asn	Ser	Gly	Gly	Asn	Tyr	Ala	Thr	Ser	Phe	Ser	Asn	Lys	Asn		
	130					135						140					

Gly	Ser	Tyr	Lys	Ser	Ser	Leu	Gly	Phe	Tyr	Leu	Thr	Glu	Asn	Thr	Tyr
145				150					155						160
Gln	Gly	Arg	Asn	Gly	Tyr	Ser	Leu	Val	Leu	Asn	Gly	Leu	Glu	Lys	Gly
			165					170						175	
Ile	Asn	Asp	Gln	Ala	Lys	Gln	Arg	Ala	Ile	Val	Met	His	Gly	Ala	Ala
			180				185						190		
Tyr	Ala	Asn	Pro	Asn	Ile	Thr	Ala	Ser	Ala	Gly	Arg	Leu	Gly	Arg	Ser
		195				200						205			
Leu	Gly	Cys	Pro	Ala	Leu	Pro	Gln	Ala	Leu	Ala	Lys	Pro	Ile	Ile	Asp
	210					215				220					
Thr	Ile	Lys	Lys	Gly	Ser	Val	Leu	Phe	Ile	Tyr	Ala	Asn	Asn	Lys	Asp
225					230					235					240
Tyr	Leu	Ala	Asn	Ser	Thr	Phe	Leu	Ser	Pro	Arg	Gln	Thr	Glu	Tyr	Leu
			245					250						255	
Ser	Trp	Ala	Gln	Pro	Ala	Asn									
			260												

&lt;210&gt; 8834

&lt;211&gt; 309

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8834

Gln	Lys	Ser	Ala	Met	Lys	Asn	Pro	Ile	Ile	Tyr	Arg	Ile	Leu	Gln	Gln
1				5					10					15	
Gly	Phe	Cys	Leu	Ile	Phe	Cys	Leu	Gly	Leu	Leu	Ser	Ser	Cys	Ile	Arg
			20					25					30		
Glu	Glu	Glu	Phe	Val	Asn	Asn	Pro	Gln	Gly	Asn	Phe	Glu	Gln	Leu	Trp
		35					40				45				
Lys	Ile	Ile	Asp	Glu	Gln	Tyr	Cys	Phe	Leu	Asp	Tyr	Lys	Gln	Ile	Asp
	50					55				60					
Trp	Asp	Glu	Ile	His	Thr	Arg	Tyr	Gln	Lys	Leu	Ile	Thr	Pro	Asn	Met
65					70					75					80
Gly	Ser	Glu	Gly	Leu	Phe	Glu	Val	Leu	Ser	Glu	Met	Leu	Tyr	Glu	Leu
			85						90					95	
Gln	Asp	Gly	His	Val	Asn	Leu	Ala	Ser	Ala	His	Asn	Val	Ser	Tyr	Tyr
		100						105					110		
Asp	Ala	Trp	Tyr	Gln	Asp	Tyr	Pro	Arg	Asn	Phe	Arg	Ala	Asp	Leu	Leu
		115					120					125			
Glu	Asp	Ser	Tyr	Leu	Gly	Arg	Ala	Ser	Thr	Asp	Tyr	Arg	Thr	Ala	Ala
	130					135					140				
Gly	Leu	Lys	Tyr	Lys	Ile	Leu	Lys	Asp	Asn	Ile	Gly	Tyr	Ile	Arg	Tyr
145					150					155					160
Glu	Ser	Phe	Ala	Asp	Pro	Val	Gly	Asn	Gly	Asn	Leu	Asp	Glu	Val	Leu
			165					170						175	
Ser	Tyr	Leu	Ser	Val	Cys	Asn	Gly	Leu	Ile	Ile	Asp	Val	Arg	Asp	Asn
			180					185					190		
Gly	Gly	Gly	Asn	Ala	Thr	Asn	Ser	Ala	Arg	Ile	Ala	Ser	Arg	Phe	Thr
		195					200						205		
Asn	Glu	Lys	Ile	Leu	Thr	Gly	Tyr	Ile	Ser	His	Lys	Thr	Gly	Thr	Gly
	210					215					220				
His	Asn	Asp	Phe	Ser	Lys	Pro	Tyr	Ala	Ile	Tyr	Leu	Glu	Pro	Ala	Asn
225					230					235					240
Gly	Val	Arg	Trp	Gln	Lys	Lys	Val	Val	Val	Leu	Thr	Asn	Arg	Arg	Ser
			245					250						255	
Phe	Ser	Ala	Thr	Asn	Asp	Phe	Val	Asn	His	Met	Arg	Cys	Leu	Ala	Asn
		260						265					270		
Val	Thr	Thr	Ile	Gly	Asp	Gln	Asn	Arg	Arg	Gly	Ser	Gly	Met	Pro	Phe
		275					280						285		



Thr Phe Glu Leu Pro Asn Gly Trp Ser Val Pro Phe Phe Pro Gly Pro  
 290 295 300  
 Ile Leu Met Arg Arg  
 305

<210> 8835  
 <211> 79  
 <212> PRT  
 <213> B.fragilis

<400> 8835  
 Tyr Gln Leu Ala Leu Leu Ile Leu Leu Arg Asp Lys Leu Phe Ile Ile  
 1 5 10 15  
 Asn Lys Gly Leu Glu Thr Leu Trp Ser Ser Thr Met Ala Lys Ile Tyr  
 20 25 30  
 Phe Ile Leu Ile Ser Arg Thr Asn Ile Leu Tyr Asn Leu Asp Leu Tyr  
 35 40 45  
 Leu Tyr Ile His Ile Met Thr Leu Leu Cys Phe Ile Lys Met Ile Cys  
 50 55 60  
 Glu Tyr Ile Tyr Lys Arg Trp Phe Leu Arg Phe Arg Asn Ile Phe  
 65 70 75

<210> 8836  
 <211> 370  
 <212> PRT  
 <213> B.fragilis

<400> 8836  
 Cys Ala Leu Tyr Leu Arg Gln Gln Gln Gly Leu Ser Gly Gln Gln His  
 1 5 10 15  
 Leu Pro Val Ser Thr Ala Asn Gly Val Ser Phe Met Gly Ala Ala Cys  
 20 25 30  
 Gln Leu Lys Ile Leu Ser Tyr Leu Cys Gly Lys Gly Ile Phe Ile Leu  
 35 40 45  
 Thr Lys Thr Ile Met Lys Lys Phe Thr Cys Val Gln Asp Ile Gly Asp  
 50 55 60  
 Leu Lys Ser Ala Leu Ala Glu Ser Phe Glu Ile Lys Lys Asp Arg Phe  
 65 70 75 80  
 Lys Tyr Val Glu Leu Gly Arg Asn Lys Thr Leu Leu Met Ile Phe Phe  
 85 90 95  
 Asn Ser Ser Leu Arg Thr Arg Leu Ser Thr Gln Lys Ala Ala Leu Asn  
 100 105 110  
 Leu Gly Met Asn Val Ile Val Leu Asp Ile Asn Gln Gly Ala Trp Lys  
 115 120 125  
 Leu Glu Thr Glu Arg Gly Val Ile Met Asp Gly Asp Lys Pro Glu His  
 130 135 140  
 Leu Leu Glu Ala Ile Pro Val Met Gly Cys Tyr Cys Asp Ile Ile Gly  
 145 150 155 160  
 Val Arg Ser Phe Ala Arg Phe Glu Asn Arg Glu Tyr Asp Tyr Asn Glu  
 165 170 175  
 Val Ile Ile Asn Gln Phe Ile Gln His Ser Gly Arg Pro Val Phe Ser  
 180 185 190  
 Met Glu Ala Ala Thr Arg His Pro Leu Gln Ser Phe Ala Asp Leu Ile  
 195 200 205  
 Thr Ile Glu Glu Tyr Lys Lys Thr Ala Arg Pro Lys Val Val Met Thr  
 210 215 220  
 Trp Ala Pro His Pro Arg Pro Leu Pro Gln Ala Val Pro Asn Ser Phe  
 225 230 235 240  
 Ala Glu Trp Met Asn Ala Thr Asp Tyr Glu Phe Val Ile Thr His Pro

245 250 255  
 Glu Gly Tyr Glu Leu Asp Pro Lys Phe Val Gly Asn Ala Arg Val Glu  
 260 265 270  
 Tyr Asp Gln Met Lys Ala Phe Glu Gly Ala Asp Phe Ile Tyr Ala Lys  
 275 280 285  
 Asn Trp Ala Ala Tyr Thr Gly Asp Asn Tyr Gly Gln Ile Leu Ser Thr  
 290 295 300  
 Asp Arg Asn Trp Thr Val Gly Asp Arg Gln Met Ala Val Thr Asn Asn  
 305 310 315 320  
 Ala Tyr Phe Met His Cys Leu Pro Val Arg Arg Asn Met Ile Val Thr  
 325 330 335  
 Asp Asp Val Ile Glu Ser Pro Gln Ser Ile Val Ile Pro Glu Ala Ala  
 340 345 350  
 Asn Arg Glu Ile Ser Ala Thr Val Val Leu Lys Arg Leu Leu Glu Asn  
 355 360 365  
 Leu Pro  
 370

<210> 8837  
 <211> 208  
 <212> PRT  
 <213> B.fragilis

<400> 8837  
 Ala Gly Asn Tyr Trp Ser Ala Tyr Tyr Arg Tyr Phe Phe His Phe Phe  
 1 5 10 15  
 Leu Phe Ile Thr Met Lys Gly Tyr Asn Ile Phe Phe Phe Ile Pro Leu  
 20 25 30  
 Leu Phe Leu Leu Leu Ser Leu His Ala Cys Thr Ser Lys Ser Lys Lys  
 35 40 45  
 Asp Met Glu Tyr Val Lys Gly Trp His Gly Lys Lys Ile Ser Leu Pro  
 50 55 60  
 Ser Glu Ser Asp Phe Leu Leu Phe Gly Arg Asp Ser Val Val Tyr Asp  
 65 70 75 80  
 Tyr Ser Ser Phe Pro Tyr Lys Ile Val Leu Val Ile Gly Lys Glu Gln  
 85 90 95  
 Cys Ile Ser Cys Lys Phe Asp Val Ala Lys Trp Gln Glu Leu Ile Gln  
 100 105 110  
 Gln Val Asp Ser Ile Thr Ser Phe Lys Val Gly Phe Val Phe Val Leu  
 115 120 125  
 Glu Pro Ile Tyr Gln His Asp Val Tyr Val Met Leu Arg Ser His Gln  
 130 135 140  
 Phe Met Thr Pro Val Phe Ile Asp Thr Asn Asn Thr Phe Arg Gly Met  
 145 150 155 160  
 Asn Lys Ile Ser Asp Asn Asp Ser His Val Trp Leu Leu Asp Ser Asn  
 165 170 175  
 Asn Arg Ile Ile Tyr Ile Gly Asp Pro Thr Val Asn Gln Lys Ile Asn  
 180 185 190  
 Lys Glu Tyr Met Glu Leu Val Arg Thr Asn Tyr Leu Phe Asn Asp Lys  
 195 200 205

<210> 8838  
 <211> 139  
 <212> PRT  
 <213> B.fragilis

<400> 8838  
 Val Leu Asp Tyr Leu Cys Arg Asn Ile Asn Leu Phe Ile Met Lys Lys  
 1 5 10 15

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<210> 8839
<211> 297
<212> PRT
<213> B.fragilis
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Ile	Phe	Leu	Tyr	Met	Lys	Thr	Ile	Ser	Lys	Leu	Phe	Leu	Leu	Leu	Ser
1				5					10					15	
Ile	Ile	Leu	Leu	Ser	Ser	Cys	Asp	Glu	Thr	Glu	Leu	Asp	Gln	Thr	Val
			20					25					30		
Thr	Asn	Gln	Val	Asn	Pro	Gln	Lys	Glu	Glu	Asp	Ser	Arg	Ile	Val	Phe
			35				40					45			
Asn	Ser	Ala	Lys	Glu	Phe	Tyr	Asn	Thr	Leu	Asp	Thr	Leu	Ser	Tyr	Met
			50			55					60				
Thr	Tyr	Glu	Glu	Gln	Thr	Glu	Trp	Ile	Arg	Ala	Ser	Gly	Ile	Lys	Tyr
65					70				75					80	
Pro	Leu	Tyr	Lys	Asp	Leu	Glu	Phe	Cys	Glu	Asp	Glu	Ile	Met	Thr	Glu
				85					90					95	
Met	Pro	Arg	Ala	Phe	Gln	Ala	Leu	Phe	Asn	His	Lys	Met	Glu	Met	Gln
			100					105					110		
Ile	Asn	Asp	Thr	Val	Ile	Ala	Phe	Glu	Lys	Gly	Asn	Met	Tyr	Val	Lys
			115				120					125			
Ser	Ile	Lys	Glu	Lys	Ile	Leu	Pro	Val	Pro	Val	Leu	Tyr	Gly	Gln	Val
			130			135					140				
Gly	Val	Asn	Gln	Glu	Glu	Ser	Glu	Val	Thr	Thr	Arg	Thr	Val	Tyr	Glu
145					150					155					160
Thr	Lys	Tyr	Gly	Lys	Ile	Gly	Thr	Ser	Tyr	Gln	Tyr	Glu	Phe	Lys	Ile
				165					170					175	
Pro	Glu	Gly	Lys	Ser	Lys	Tyr	Lys	Tyr	Val	His	Glu	Leu	Lys	Ser	Val
			180					185					190		
Ile	Ile	Lys	Glu	Asn	Leu	Pro	Pro	Tyr	Lys	Ser	Trp	Ser	Asn	Leu	Phe
		195					200					205			
Leu	Val	Leu	Lys	Leu	Glu	Trp	Lys	Gly	Lys	Lys	Lys	Trp	Lys	Val	Ala
			210			215					220				
Glu	Lys	Glu	Glu	Arg	Asn	Ile	Ser	Ile	Asp	Leu	Asn	Val	Cys	Lys	Arg
225					230					235				240	
Asn	Leu	Ala	Lys	Val	Lys	Tyr	Asn	Gln	Glu	Ile	Arg	Ile	Asp	Val	Gln
				245					250					255	
Asn	Met	Asp	Ser	Lys	Ser	His	Ser	Ile	Asn	Ile	Glu	Gly	Tyr	Ile	Ile
			260					265					270		
His	Glu	Val	Val	Gly	Ile	Pro	Ser	Thr	Lys	Met	Phe	Asn	Gly	Trp	Ser
			275				280					285			

[illegible]

Tyr Pro Leu Val Glu Trp Gln Pro Arg  
290 295

<210> 8840

<211> 255

<212> PRT

<213> B.fragilis

<400> 8840

Ile	Ser	Ile	His	Ala	Phe	Tyr	Leu	Leu	Ser	Gly	Lys	Ile	Gly	Thr	Gly
1				5					10					15	
Glu	Asn	Ala	Ile	Phe	Ala	Gln	Lys	Thr	Ser	Ile	Val	Val	Lys	Val	Glu
			20					25					30		
Phe	Thr	Asp	Glu	Tyr	Gln	Lys	Ile	Leu	Trp	Gln	Ile	Ser	Leu	Phe	Lys
		35					40					45			
Asp	Met	Asp	Asn	Ser	Leu	Gln	Arg	Arg	Leu	Pro	Gln	Glu	Leu	Glu	Leu
	50					55					60				
Ser	Val	Tyr	Glu	Val	Ala	Arg	Lys	Glu	Ile	Val	Leu	Lys	Gln	Asp	Thr
65					70					75				80	
Tyr	Cys	Asn	His	Leu	Tyr	Val	Leu	Leu	Lys	Gly	Glu	Leu	Glu	Val	Asn
			85						90					95	
Ile	Val	Asp	Val	Ala	Gly	Asn	Leu	Val	Lys	Val	Glu	Asp	Ile	Arg	Ala
			100					105					110		
Pro	Arg	Ala	Phe	Ala	Thr	Pro	His	Leu	Phe	Gly	Asp	Lys	Asn	Leu	Leu
		115					120					125			
Pro	Ala	Thr	Phe	Thr	Ala	Ser	Glu	Asp	Ser	Val	Leu	Leu	Met	Ala	Thr
		130				135					140				
Arg	Thr	Ser	Val	Phe	Lys	Leu	Ile	Ser	Ser	Val	Pro	Asp	Leu	Leu	His
145					150					155				160	
Arg	Phe	Leu	Cys	Val	Thr	Gly	Asn	Cys	Asn	Lys	Cys	Thr	Val	Thr	Arg
			165					170					175		
Leu	Arg	Ile	Leu	Ser	Tyr	Lys	Met	Leu	Arg	Ser	Arg	Leu	Val	Tyr	Tyr
			180				185					190			
Phe	Met	Glu	His	Lys	Ile	Ser	Pro	Asp	Thr	Ala	Leu	Leu	Glu	His	Asn
		195				200					205				
Gln	Val	Gln	Leu	Ala	Glu	Tyr	Leu	Gly	Val	Thr	Arg	Pro	Ala	Leu	Ser
	210					215				220					
Lys	Glu	Ile	Asn	Lys	Met	Lys	Glu	Gly	Leu	Ile	Ser	Ile	Asn	Lys	
225				230					235					240	
Lys	Val	Val	Thr	Leu	Glu	Asp	Met	Ala	Ala	Leu	Lys	Glu	Tyr	Ile	
			245					250						255	

<210> 8841

<211> 456

<212> PRT

<213> B.fragilis

<400> 8841

Asp	Arg	Ser	Gln	Leu	Trp	Gln	Glu	Ser	Arg	Gly	Tyr	Ser	Pro	Lys	Asn
1			5					10						15	
Lys	Ile	Asn	Pro	Phe	Leu	Phe	Thr	Gly	Tyr	Leu	Lys	His	Thr	Glu	Asn
		20					25					30			
Met	Thr	Tyr	Arg	Arg	Ser	Ile	Leu	Lys	Leu	Leu	Leu	Thr	Phe	Phe	Val
		35				40						45			
Phe	Met	Thr	Ser	Thr	Leu	Leu	Ser	Arg	Gly	Ala	Glu	Pro	Gly	Ala	Arg
	50				55					60					
Pro	Pro	Arg	Ile	Arg	Ile	Lys	Thr	Gly	Ile	Glu	Val	Leu	Lys	Glu	Gln
65				70					75					80	
Asn	Phe	Lys	Cys	Leu	Glu	Gly	Lys	Arg	Val	Gly	Leu	Ile	Thr	Asn	Pro

[illegible]

<400> 8842

Phe	Cys	Thr	His	Asn	Arg	Glu	Lys	Pro	Ile	Ile	Met	Lys	Leu	Ser	Ala
1				5					10					15	
Leu	Tyr	Gln	Ile	Phe	Leu	Asp	Cys	Ala	Val	Val	Thr	Thr	Asp	Ser	Arg
			20					25					30		
Asn	Cys	Pro	Ala	Gly	Ser	Leu	Phe	Ile	Ala	Leu	Lys	Gly	Glu	Ser	Phe

[illegible]

<400> 8843  
Leu Phe Asn His Ile Pro Ile Met Lys Gln Ser Leu Pro Tyr Gln Pro

1		5		10		15									
Gly	Pro	Ile	Gly	Val	Phe	Asp	Ser	Gly	Tyr	Gly	Gly	Leu	Thr	Ile	Leu
		20						25					30		
Ser	Lys	Ile	Arg	Glu	Ala	Leu	Pro	Glu	Tyr	Asp	Tyr	Ile	Tyr	Leu	Gly
		35						40					45		
Asp	Asn	Ala	Arg	Thr	Pro	Tyr	Gly	Thr	Arg	Ser	Phe	Glu	Ile	Val	Tyr
	50					55					60				
Glu	Phe	Thr	Leu	Gln	Ala	Val	Asn	Lys	Leu	Phe	Glu	Met	Gly	Cys	His
65					70					75					80
Leu	Val	Ile	Leu	Ala	Cys	Asn	Thr	Ala	Ser	Ala	Lys	Ala	Leu	Arg	Thr
				85					90					95	
Ile	Gln	Met	Asn	Asp	Leu	Pro	Asn	Ile	Asp	Pro	Asp	Arg	Arg	Val	Leu
			100					105						110	
Gly	Val	Ile	Arg	Pro	Thr	Ala	Glu	Cys	Ile	Gly	Ser	Met	Thr	Gln	Thr
		115					120						125		
Arg	His	Val	Gly	Ile	Leu	Ala	Thr	Ala	Gly	Thr	Ile	Lys	Ser	Glu	Ser
	130					135						140			
Tyr	Pro	Leu	Glu	Val	His	Lys	Leu	Phe	Glu	Asp	Ile	Lys	Val	Ser	Gly
145					150					155					160
Glu	Ala	Cys	Pro	Met	Trp	Val	Pro	Leu	Val	Glu	Asn	Asn	Glu	Ala	Asn
			165						170					175	
Gly	Glu	Gly	Ala	Asp	Phe	Phe	Ile	Arg	Lys	Tyr	Ile	Asp	Asn	Leu	Leu
		180						185						190	
Ala	Lys	Asp	Arg	Gln	Ile	Asp	Thr	Leu	Val	Leu	Gly	Cys	Thr	His	Tyr
		195					200					205			
Pro	Ile	Leu	Leu	Pro	Lys	Ile	Gln	Lys	Phe	Ile	Pro	Gln	Gly	Val	Lys
	210				215						220				
Val	Val	Ala	Gln	Gly	Glu	Tyr	Val	Ala	Thr	Ser	Leu	Lys	Asp	Tyr	Leu
225					230					235					240
His	Arg	His	Pro	Glu	Met	Asp	Met	Lys	Cys	Thr	Arg	Glu	Gly	Lys	Cys
			245						250					255	
Arg	Phe	Tyr	Thr	Thr	Glu	Ala	Glu	Asp	Lys	Phe	Ile	Glu	Ser	Ala	Ser
			260					265						270	
Met	Phe	Leu	Asn	Glu	Asn	Ile	Thr	Val	Gln	Arg	Ile	Thr	Leu	Glu	
		275					280						285		

&lt;210&gt; 8844

&lt;211&gt; 459

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8844

His	Ile	Leu	Phe	Met	Thr	Lys	Lys	Glu	Arg	Gly	Asn	Phe	Gly	Ser	Lys
1				5					10					15	
Leu	Gly	Val	Ile	Leu	Ala	Ser	Ala	Gly	Ser	Ala	Val	Gly	Leu	Gly	Asn
		20						25					30		
Ile	Trp	Arg	Phe	Pro	Tyr	Glu	Thr	Gly	Asn	His	Gly	Gly	Ala	Ala	Phe
		35						40					45		
Ile	Leu	Ile	Tyr	Leu	Gly	Cys	Ile	Leu	Leu	Leu	Gly	Leu	Pro	Ile	Met
	50					55					60				
Ile	Ala	Glu	Phe	Leu	Ile	Gly	Arg	His	Ser	Gln	Ala	Asn	Thr	Ala	Arg
65					70					75					80
Ala	Tyr	Gln	Ile	Leu	Ala	Pro	Gly	Thr	Gln	Trp	Arg	Trp	Val	Gly	Arg
			85						90					95	
Met	Gly	Val	Leu	Ala	Gly	Phe	Leu	Ile	Leu	Gly	Tyr	Tyr	Ser	Val	Val
		100						105						110	
Ala	Gly	Trp	Thr	Leu	Glu	Tyr	Ile	Phe	Glu	Ala	Val	Ser	Asn	Ser	Phe
		115					120						125		
Ala	Gly	Lys	Thr	Pro	Ala	Glu	Phe	Ile	Ser	Ser	Phe	Gln	Ser	Phe	Ser

130 135 140  
 Ser Asn Pro Trp Arg Pro Ala Leu Trp Leu Thr Leu Phe Leu Leu Ala  
 145 150 155 160  
 Thr His Phe Ile Ile Val Lys Gly Val Glu Lys Gly Ile Glu Lys Ser  
 165 170 175  
 Ser Lys Ile Met Met Pro Thr Leu Phe Ile Ile Ile Leu Ile Leu Val  
 180 185 190  
 Gly Cys Ser Val Thr Leu Pro Gly Ala Gly Lys Gly Ile Glu Phe Leu  
 195 200 205  
 Leu Lys Pro Asp Phe Ser Lys Val Asp Gly Asn Val Phe Leu Gly Ala  
 210 215 220  
 Met Gly Gln Ala Phe Phe Ser Leu Ser Leu Gly Met Gly Cys Leu Cys  
 225 230 235 240  
 Thr Tyr Ala Ser Tyr Phe Ser Lys Asn Thr Asn Leu Thr Arg Thr Ala  
 245 250 255  
 Phe Ser Val Gly Ile Ile Asp Thr Phe Val Ala Val Leu Ala Gly Phe  
 260 265 270  
 Ile Ile Phe Pro Ala Ala Phe Ser Val Gly Ile Gln Pro Asp Ala Gly  
 275 280 285  
 Pro Ser Leu Ile Phe Ile Thr Leu Pro Asn Val Phe Gln Gln Ala Phe  
 290 295 300  
 Ser Gly Ile Pro Ile Leu Ala Tyr Ile Phe Ser Val Met Phe Tyr Val  
 305 310 315 320  
 Leu Leu Ala Leu Ala Leu Thr Ser Thr Ile Ser Leu His Glu Val  
 325 330 335  
 Val Thr Ala Tyr Leu His Glu Glu Phe Asn Phe Thr Arg Gly Lys Ala  
 340 345 350  
 Ala Arg Leu Val Thr Thr Gly Cys Ile Leu Leu Gly Ile Leu Cys Ser  
 355 360 365  
 Leu Ser Leu Gly Val Thr Lys Glu Phe Thr Ile Phe Gly Leu Gly Met  
 370 375 380  
 Phe Asp Leu Phe Asp Phe Val Thr Ala Lys Leu Met Leu Pro Leu Gly  
 385 390 395 400  
 Gly Leu Leu Ile Ser Ile Phe Thr Gly Trp Tyr Leu Asp Lys Lys Leu  
 405 410 415  
 Val Trp Ser Glu Ile Thr Asn Asn Gly Thr Leu Lys Val Pro Thr Tyr  
 420 425 430  
 Lys Leu Ile Ile Phe Ile Leu Lys Tyr Val Ala Pro Ile Ala Ile Ser  
 435 440 445  
 Val Ile Phe Ile Asn Glu Leu Gly Leu Leu Lys  
 450 455

&lt;210&gt; 8845

&lt;211&gt; 1121

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8845

Lys Thr Lys Gln Leu Asn His Leu Ser Phe Met Asn Glu Asp Arg Lys  
 1 5 10 15  
 Lys Arg Gly Leu Ala Asn Ser Asn Leu Leu Ile Ala Met Ala Ile Thr  
 20 25 30  
 Ala Leu Ile Ile Gly Ser Ser Asn Ala Met Ala Asn Gln Thr Ala Ser  
 35 40 45  
 Gly Ser Ser Tyr Lys Val Thr Glu Gln Met Gln Ile Gln Thr Val Thr  
 50 55 60  
 Gly Val Val Val Asp Ala Asn Gly Glu Pro Ile Ile Gly Ala Ser Val  
 65 70 75 80  
 Val Glu Lys Gly Thr Thr Asn Gly Ile Val Thr Asp Met Asp Gly Lys



				85					90				95		
Phe	Ser	Leu	Asn	Val	Lys	Val	Gly	Thr	Thr	Leu	Gln	Ile	Thr	Phe	Val
			100						105				110		
Gly	Tyr	Gln	Pro	Gln	Asp	Val	Lys	Ala	Thr	Lys	Ser	Met	Lys	Val	Val
		115						120				125			
Leu	Lys	Glu	Asp	Asn	Glu	Leu	Leu	Asp	Glu	Val	Val	Val	Val	Gly	Tyr
	130					135					140				
Gly	Thr	Gln	Lys	Lys	Ala	Asn	Leu	Thr	Gly	Ala	Val	Ser	Thr	Val	Asp
145					150					155					160
Val	Ser	Lys	Thr	Leu	Glu	Ala	Arg	Pro	Gln	Ser	Asp	Val	Ser	Lys	Ala
				165					170						175
Leu	Gln	Gly	Val	Val	Pro	Gly	Leu	Thr	Ile	Thr	Asn	Thr	Ser	Gly	Lys
			180					185					190		
Leu	Asn	Ser	Lys	Pro	Thr	Met	Thr	Ile	Arg	Gly	Thr	Gly	Thr	Leu	Ser
	195						200					205			
Asn	Ser	Ala	Thr	Ser	Asn	Pro	Leu	Ile	Val	Val	Asp	Gly	Val	Pro	Met
	210					215					220				
Asp	Asp	Ile	Ser	Tyr	Leu	Asn	Thr	Gln	Asp	Ile	Asp	Asn	Ile	Ser	Val
225					230					235					240
Leu	Lys	Asp	Ala	Ala	Ser	Thr	Ser	Ile	Tyr	Gly	Thr	Arg	Ala	Ala	Phe
			245						250						255
Gly	Val	Ile	Leu	Val	Thr	Thr	Lys	Ser	Ala	Lys	Lys	Thr	Asp	Lys	Val
		260						265					270		
Thr	Ile	Asn	Tyr	Thr	Asn	Asn	Phe	Ser	Trp	Asp	Thr	Pro	Thr	Ile	Leu
	275						280					285			
Pro	Asn	Tyr	Pro	Asp	Val	Ala	Thr	Gln	Ala	Arg	Ala	Leu	Arg	Ala	Ala
	290					295					300				
Asn	Thr	Arg	Ala	Asn	Leu	Glu	Asn	Glu	Leu	Phe	Gly	Met	Tyr	Met	Asp
305					310					315					320
Asp	Asn	Phe	Ile	Ala	Lys	Ala	Glu	Ala	Trp	Lys	Gln	Arg	His	Gly	Gly
			325						330					335	
Lys	Lys	Ala	Gly	Tyr	Arg	Glu	Met	Ile	Pro	Gly	Asp	Asp	Phe	Asp	Leu
		340						345					350		
Gly	Glu	Asp	Gly	Ser	Ala	Leu	Tyr	Tyr	Ala	Asp	Trp	Asp	Val	Val	Gly
		355					360					365			
Ile	Met	Phe	Arg	Asp	Trp	Lys	Pro	Ala	Gln	Ser	His	Asn	Ile	Ser	Ile
	370					375					380				
Gln	Gly	Thr	Ser	Gly	Lys	Thr	Ser	Tyr	Phe	Leu	Ser	Val	Gly	Tyr	Asn
385					390					395					400
His	Glu	Glu	Gly	Val	Met	Thr	Phe	Asn	Pro	Asp	Lys	Leu	Asn	Lys	Tyr
			405						410					415	
Asn	Ala	Asn	Met	Asn	Val	Thr	Ser	Asp	Ile	Thr	Asn	Trp	Leu	Gln	Ile
			420					425					430		
Gly	Gly	Arg	Phe	Ser	Tyr	Ser	Asp	Lys	Ala	Tyr	Thr	Thr	Pro	Asn	Thr
		435					440					445			
Arg	Arg	Asn	Thr	Tyr	Thr	Tyr	Met	Trp	Arg	Trp	Gly	Ser	Phe	Phe	Gly
	450					455					460				
Pro	Tyr	Gly	Thr	Tyr	Gln	Gly	Ile	Asp	Met	Lys	Asn	Asp	Ile	Ala	Tyr
465					470					475					480
Leu	Lys	Gln	Ala	Gly	Asp	Asp	Lys	Thr	Asn	Asp	Ser	Tyr	Thr	Arg	Ile
			485						490					495	
Gly	Ala	Phe	Leu	Lys	Ala	Thr	Ile	Ile	Lys	Gly	Leu	Thr	Leu	Asn	Ala
		500						505					510		
Asp	Tyr	Thr	Phe	Asn	Ile	Asn	Asn	Lys	Thr	Thr	Lys	Ser	Val	Gly	Leu
	515						520					525			
Pro	Val	Ile	Cys	Trp	Asn	Ser	Trp	Gly	Gly	Lys	Leu	Asn	Thr	Pro	Thr
	530					535					540				
Thr	Ala	Ala	Gly	Ala	Asn	Gly	Asp	Thr	Trp	Val	Tyr	Gln	Asn	Ser	Val
545					550					555					560

Arg	Asp	Asn	Ser	Tyr	Ala	Leu	Asn	Val	Phe	Ala	Asn	Tyr	Glu	Leu	Thr
			565						570					575	
Val	Ala	Lys	Asp	His	His	Phe	Asn	Phe	Met	Ile	Gly	Ala	Asn	Ala	Glu
			580					585						590	
Glu	Gly	Glu	Tyr	Gln	Asn	His	Trp	Ser	Gln	Arg	Lys	Gly	Leu	Leu	Asp
		595					600					605			
Asp	Lys	Leu	Pro	Glu	Phe	Asn	Leu	Ala	Thr	Gly	Asp	Gln	Thr	Val	Gly
	610					615					620				
Gly	Thr	His	Asn	Glu	Trp	Gly	Thr	Ala	Gly	Trp	Phe	Gly	Arg	Ile	Asn
625					630					635					640
Tyr	Asp	Tyr	Asn	Gly	Ile	Trp	Leu	Leu	Glu	Leu	Asn	Gly	Arg	Tyr	Asp
			645						650						655
Gly	Ser	Ser	Lys	Phe	Pro	Ser	Ser	Asp	Arg	Trp	Ala	Phe	Phe	Pro	Ser
			660					665					670		
Gly	Ser	Val	Gly	Tyr	Arg	Ile	Ser	Glu	Glu	Lys	Phe	Phe	Glu	Pro	Ile
		675					680					685			
Lys	Lys	Ile	Val	Ser	Asn	Thr	Lys	Ile	Arg	Ala	Ser	Tyr	Gly	Glu	Ile
	690					695					700				
Gly	Asn	Gln	Ala	Val	Gly	Ser	Asn	Met	Tyr	Ile	Ser	Thr	Val	Ser	Lys
705					710					715					720
Arg	Thr	Asp	Gly	Asn	Thr	His	Trp	Leu	Asn	Gly	Ser	Asn	Lys	Val	Val
			725						730						735
Ala	Tyr	Asp	Leu	Pro	Ser	Leu	Val	Ser	Pro	Thr	Leu	Lys	Trp	Glu	Arg
			740					745					750		
Ile	Gln	Thr	Leu	Asp	Ile	Gly	Gly	Asp	Phe	Gly	Phe	Phe	Asn	Asn	Glu
		755					760					765			
Leu	Asn	Ile	Ser	Phe	Asp	Trp	Tyr	Gln	Arg	Thr	Thr	Lys	Asp	Met	Leu
	770					775						780			
Ala	Pro	Gly	Gln	Thr	Met	Pro	Asp	Val	Leu	Gly	Ala	Gly	Ala	Pro	Lys
785					790					795					800
Ile	Asn	Ala	Gly	Thr	Leu	Arg	Thr	Arg	Gly	Trp	Glu	Leu	Ser	Ile	Asp
			805						810						815
Trp	Arg	His	His	Phe	Asn	Glu	Ile	Asn	Val	Tyr	Ala	Asn	Ala	Ser	Ile
			820					825					830		
Gly	Asp	Phe	Lys	Thr	Val	Ile	Thr	Lys	Trp	Asp	Asn	Asp	Ser	Gln	Leu
		835					840					845			
Leu	Asn	Glu	Asn	Tyr	Ser	Gly	Lys	Val	Tyr	Gly	Asp	Ile	Trp	Gly	Phe
	850					855					860				
Glu	Thr	Asp	Arg	Tyr	Phe	Thr	Lys	Asp	Asp	Phe	Asn	Ala	Asp	Gly	Ser
865					870					875					880
Tyr	Lys	Glu	Gly	Ile	Ala	Ser	Gln	Lys	Lys	Leu	Glu	Gln	Asp	Gly	Phe
			885						890						895
Val	Tyr	Gly	Pro	Gly	Asp	Ile	Lys	Phe	Lys	Asp	Leu	Asn	Asn	Asp	Lys
			900					905					910		
Glu	Ile	Asn	Gly	Gly	Glu	Gly	Thr	Val	Lys	Asp	His	Gly	Asp	Leu	Lys
		915					920					925			
Val	Ile	Gly	Asn	Thr	Thr	Pro	Arg	Tyr	Gln	Tyr	Gly	Phe	Arg	Leu	Gly
	930					935					940				
Gly	Glu	Trp	Lys	Gly	Ile	Asp	Ile	Asp	Met	Phe	Phe	Gln	Gly	Val	Gly
945					950					955					960
Lys	Cys	Asp	Ala	Trp	Thr	Gln	Ser	Ala	Phe	Val	Met	Pro	Met	Met	Arg
			965						970						975
Gly	Ala	Asp	Ala	Ile	Tyr	Ala	Asn	Gln	Ala	Asn	Tyr	Trp	Thr	Asp	Glu
			980					985					990		
Asn	Pro	Asp	Pro	Asn	Ala	Asp	Phe	Pro	Arg	Met	Trp	Pro	Gly	Asn	Ala
		995					1000					1005			
Gly	Lys	Gly	Thr	Val	Ser	Val	Leu	Asp	Leu	Gly	Asn	His	Asn	Phe	Tyr
	1010					1015					1020				
Pro	Gln	Ser	Lys	Tyr	Leu	Val	Asn	Met	Ala	Tyr	Leu	Arg	Phe	Lys	Asn

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1025                      1030                      1035                      1040  
 Leu Thr Ile Gly Tyr Thr Leu Pro Lys Asp Trp Thr Arg Lys Val Tyr  
                                  1045                      1050                      1055  
 Met Asp Lys Val Arg Val Tyr Phe Ser Ala Asn Asn Ile Cys Glu Leu  
                                  1060                      1065                      1070  
 Ile Asn Lys Ser Asn Ala Pro Val Asp Pro Glu Val Asn Thr Ser Glu  
                                  1075                      1080                      1085  
 Ala Ile Ala Asn Gly Gly Ser Ser Asp Tyr Gly Asn Gly Thr Trp Gly  
                                  1090                      1095                      1100  
 Arg Val Asp Pro Met Tyr Arg Thr Val Ser Phe Gly Leu Gln Val Thr  
 1105                      1110                      1115                      1120  
 Phe

<210> 8846  
 <211> 175  
 <212> PRT  
 <213> B.fragilis

<400> 8846  
 Thr Met Trp Gln Lys Pro Trp Gly Tyr Lys Glu Gly Phe Ala Ile Cys  
 1                      5                      10                      15  
 Gly Gly Leu Phe Leu Thr Gly Thr Phe Leu Gln Ile Thr Ile Gly Lys  
                                  20                      25                      30  
 Cys Glu Leu Ser Ile Leu Ser Tyr Pro Met Asn Val Cys Val Gly Val  
                                  35                      40                      45  
 Leu Tyr Leu Val Ile Leu Leu Leu Ile Tyr Ala Phe Ser Gln Lys Ser  
                                  50                      55                      60  
 Tyr Phe Ile Arg Trp Met Gly Ser Cys Gln Ala Ala Val Ser Ser Met  
 65                      70                      75                      80  
 Val Ser Val Ala Met Leu Thr Val Val Met Gly Leu Ile Arg Gln Val  
                                  85                      90                      95  
 Lys Ser Asp Val Pro Leu Leu Gly Ala Glu Ser Trp Leu Gly Phe Ser  
                                  100                      105                      110  
 Gln Met Leu Ser Ala Cys Ser Phe Val Leu Leu Phe Leu Trp Met Ile  
                                  115                      120                      125  
 Thr Met Leu Arg Leu Thr Thr Ile Arg Arg Ile His His Leu Arg Leu  
                                  130                      135                      140  
 Cys Asp Ile Pro Phe Val Leu Asn His Leu Gly Thr Val Pro Cys Thr  
 145                      150                      155                      160  
 Asp Pro Cys Tyr Leu Trp Val Met Pro Lys Trp Asn Val Cys Gly  
                                  165                      170                      175

<210> 8847  
 <211> 893  
 <212> PRT  
 <213> B.fragilis

<400> 8847  
 Phe Val Val Lys Thr Arg Gly Lys Phe Asp Phe Met Ser Glu Glu Asn  
 1                      5                      10                      15  
 Asn Glu Ile Thr Glu Gly His Ser Asp Tyr Lys Pro Ala Asp Ser His  
                                  20                      25                      30  
 Asn Glu Ser Ile Lys His Gln Leu Thr Gly Met Tyr Gln Asn Trp Phe  
                                  35                      40                      45  
 Leu Asp Tyr Ala Ser Tyr Val Ile Leu Glu Arg Ala Val Pro His Ile  
                                  50                      55                      60  
 Asn Asp Gly Leu Lys Pro Val Gln Arg Arg Ile Leu His Ser Met Lys  
 65                      70                      75                      80

Arg	Met	Asp	Asp	Gly	Arg	Tyr	Asn	Lys	Val	Ala	Asn	Ile	Val	Gly	His
				85					90					95	
Thr	Met	Gln	Phe	His	Pro	His	Gly	Asp	Ala	Ser	Ile	Gly	Asp	Ala	Leu
			100					105					110		
Val	Gln	Leu	Gly	Gln	Lys	Asp	Leu	Leu	Val	Asp	Cys	Gln	Gly	Asn	Trp
			115					120					125		
Gly	Asn	Ile	Leu	Thr	Gly	Asp	Gly	Ala	Ala	Ala	Pro	Arg	Tyr	Ile	Glu
			130					135				140			
Ala	Arg	Leu	Ser	Lys	Phe	Ala	Leu	Asp	Val	Val	Phe	Asn	Pro	Lys	Thr
145					150					155					160
Thr	Glu	Trp	Lys	Leu	Ser	Tyr	Asp	Gly	Arg	Asn	Lys	Glu	Pro	Ile	Thr
				165					170					175	
Leu	Pro	Val	Lys	Phe	Pro	Leu	Leu	Leu	Ala	Gln	Gly	Val	Glu	Gly	Ile
			180						185					190	
Ala	Val	Gly	Leu	Ser	Ser	Lys	Ile	Leu	Pro	His	Asn	Phe	Asn	Glu	Leu
			195					200					205		
Cys	Asp	Ala	Ser	Ile	Ser	Tyr	Leu	Arg	Asn	Glu	Glu	Phe	Lys	Leu	Tyr
						215					220				
Pro	Asp	Phe	Gln	Thr	Gly	Gly	Ser	Ile	Asp	Val	Ser	Lys	Tyr	Asn	Asp
225					230					235					240
Gly	Glu	Arg	Gly	Gly	Ala	Val	Lys	Ile	Arg	Ser	Lys	Ile	Asn	Lys	Val
				245						250				255	
Asp	Asn	Lys	Thr	Leu	Ala	Ile	Thr	Glu	Ile	Pro	Tyr	Gly	Arg	Thr	Thr
			260					265						270	
Thr	Ser	Val	Ile	Asp	Ser	Ile	Leu	Lys	Ala	Val	Asp	Lys	Gly	Lys	Ile
			275					280					285		
Lys	Ile	Arg	Lys	Val	Asp	Asp	Asn	Thr	Ala	Ala	Asn	Val	Glu	Ile	Leu
					295						300				
Val	His	Leu	Ala	Pro	Gly	Thr	Ser	Ser	Asp	Lys	Thr	Ile	Asp	Ala	Leu
305					310					315					320
Tyr	Ala	Phe	Thr	Asp	Cys	Glu	Val	Ser	Ile	Ser	Pro	Asn	Cys	Cys	Val
				325						330				335	
Ile	Asp	Asp	Gln	Lys	Pro	His	Phe	Leu	Thr	Ile	Ser	His	Val	Leu	Arg
			340						345					350	
Lys	Ser	Ala	Asp	Asn	Thr	Leu	Ser	Leu	Leu	Arg	Gln	Glu	Leu	Glu	Ile
			355					360					365		
Lys	Lys	Asp	Glu	Leu	Gln	Glu	Asn	Leu	His	Phe	Ala	Ser	Leu	Glu	Lys
			370				375				380				
Ile	Phe	Ile	Glu	Glu	Arg	Ile	Tyr	Lys	Asp	Lys	Glu	Phe	Glu	Gln	Ser
385					390					395					400
Lys	Asp	Met	Asp	Ala	Ala	Cys	Glu	His	Ile	Asp	Arg	Arg	Leu	Thr	Pro
				405						410				415	
Phe	Tyr	Ser	Gln	Phe	Ile	Arg	Glu	Val	Thr	Lys	Asp	Asp	Ile	Leu	Arg
			420					425						430	
Leu	Met	Glu	I												

545 550 555 560  
 Val Gly Lys Asn Val Ile Tyr Val Asn Val Phe Lys Lys Asn Asp Lys  
 565 570 575  
 Arg Thr Ile Tyr Asn Val Ala Tyr Arg Asp Gly Ala Glu Gly Thr His  
 580 585 590  
 Tyr Ile Lys Arg Phe Ala Val Thr Ser Ile Val Arg Asp Arg Glu Tyr  
 595 600 605  
 Asp Val Thr Gln Gly Lys Pro Asp Ser Arg Ile Ser Tyr Phe Ser Ala  
 610 615 620  
 Asn Pro Asn Gly Glu Ala Glu Ile Ile Lys Val Thr Leu Lys Pro Asn  
 625 630 635 640  
 Pro Arg Val Arg Arg Ile Ile Phe Glu Arg Asp Phe Ser Glu Val Thr  
 645 650 655  
 Ile Arg Ser Arg Gln Ser Gln Gly Val Ile Leu Thr Arg Leu Pro Val  
 660 665 670  
 His Lys Ile Val Leu Lys Gln Arg Gly Gly Ser Thr Leu Gly Gly Arg  
 675 680 685  
 Lys Val Trp Phe Asp Arg Asp Val Leu Arg Leu Asn Tyr Asp Gly Arg  
 690 695 700  
 Gly Glu Tyr Leu Gly Glu Phe Gln Ser Asp Asp Asn Ile Leu Val Val  
 705 710 715 720  
 Leu Asn Thr Gly Glu Phe Tyr Thr Ser Asn Phe Asp Leu Ser Asn His  
 725 730 735  
 Tyr Glu Asp Asn Val Ser Ile Val Glu Lys Phe Asp Pro Asn Lys Ile  
 740 745 750  
 Trp Thr Val Ala Leu Tyr Asp Ala Asp Gln Gln Asn Tyr Pro Tyr Leu  
 755 760 765  
 Lys Arg Phe Cys Phe Glu Ala Thr Thr Arg Lys Gln Asn Tyr Leu Gly  
 770 775 780  
 Glu Asn Lys His Asn Arg Leu Ile Leu Met Thr Asp Glu Tyr Tyr Pro  
 785 790 795 800  
 Arg Leu Glu Ile Ile Phe Gly Gly His Asp Ser Phe Arg Asp Pro Val  
 805 810 815  
 Val Val Asp Ala Glu Glu Phe Ile Ala Val Lys Gly Phe Lys Ala Lys  
 820 825 830  
 Gly Lys Arg Leu Thr Thr Tyr Thr Val Glu Thr Ile Asn Glu Leu Glu  
 835 840 845  
 Pro Thr Arg Phe Pro Asp Pro Pro Gln Asn Asn Glu Glu Asp Asp Thr  
 850 855 860  
 Gly Glu Glu Pro Glu Asn Leu Asp Pro Asp Ser Asp Lys Thr Glu Asn  
 865 870 875 880  
 Asp Ile Leu Asp Glu Met Thr Gly Gln Met Lys Leu Phe  
 885 890

&lt;210&gt; 8848

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8848

Pro Phe Gly Lys His Thr Leu Tyr Glu Met Ile Val Phe Asn Gln Cys  
 1 5 10 15  
 Pro Phe Arg Ser Cys Arg Thr Thr Phe Arg Asn Lys Phe His Phe Ala  
 20 25 30  
 Ala Phe Leu Ile Trp Ile Gln Ile Tyr Asn Ile Phe Cys Asn Leu Ile  
 35 40 45  
 Cys Phe Asp Arg Lys Val Phe Ser Tyr Gln Ile Asn Ala Phe Gly Asn  
 50 55 60  
 Val Val Pro Ser Leu Asn Ala Cys Ala Glu Gln Ser Phe Val Phe Ile

65		70		75		80									
Leu	Val	Ser	Asp	Leu	Ile	Lys	Ser	Phe	Leu	Phe	Asn	Arg	Leu	Tyr	Glu
			85					90						95	
Val	Tyr	Lys	Lys	Lys	Ile	Ser	Ala	Gly	Leu	Thr	Thr	Trp	Leu	Arg	
			100					105						110	

&lt;210&gt; 8849

&lt;211&gt; 839

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8849

Gly	Arg	Pro	Lys	Lys	Tyr	Glu	Ile	Ala	Asp	Ile	Lys	Val	Glu	Gly	Val
1			5					10					15		
Lys	Asn	Tyr	Glu	Asp	Tyr	Val	Leu	Ile	Gly	Leu	Ser	Gly	Leu	Ser	Val
			20					25					30		
Gly	Gln	Thr	Ile	Thr	Val	Pro	Gly	Asp	Glu	Ile	Thr	Gly	Ala	Ile	Lys
			35					40					45		
Arg	Tyr	Trp	Arg	His	Gly	Leu	Phe	Ser	Asn	Val	Ser	Ile	Thr	Ala	Glu
			50				55					60			
Lys	Ile	Glu	Gly	Asn	Lys	Ile	Trp	Leu	Lys	Ile	Thr	Leu	Ala	Gln	Arg
65					70					75					80
Pro	Arg	Ile	Ser	Asp	Ile	Arg	Tyr	His	Gly	Val	Lys	Lys	Ser	Glu	Arg
				85					90					95	
Glu	Asp	Leu	Gln	Thr	Lys	Leu	Gly	Met	Ile	Lys	Gly	Ser	Gln	Ile	Thr
			100					105					110		
Pro	Asn	Leu	Val	Asp	Arg	Ala	Lys	Val	Leu	Ser	Lys	Arg	Tyr	Phe	Asp
			115				120						125		
Asp	Lys	Gly	Phe	Lys	Asn	Ala	Glu	Ile	Thr	Ile	Thr	Gln	Arg	Asp	Asp
			130			135						140			
Pro	Ala	Asn	Glu	Asn	Gln	Val	Leu	Val	Asp	Ile	Asp	Ile	Asp	Lys	Lys
145					150					155					160
Glu	Lys	Val	Lys	Val	His	Ala	Ile	Thr	Phe	Ala	Gly	Asn	His	Ala	Ile
				165					170					175	
Lys	Thr	Ser	Lys	Leu	Lys	Arg	Val	Met	Lys	Lys	Thr	Asn	Glu	Lys	Gly
			180					185					190		
Lys	Leu	Leu	Asn	Leu	Phe	Arg	Thr	Lys	Lys	Phe	Val	Asn	Glu	Lys	Tyr
			195				200					205			
Glu	Glu	Asp	Lys	Gln	Leu	Ile	Asp	Lys	Tyr	Asn	Glu	Leu	Gly	Tyr	
			210			215					220				
Arg	Asp	Ala	Arg	Ile	Val	Lys	Asp	Ser	Val	Ser	Lys	Phe	Asp	Asp	Lys
225					230					235					240
Thr	Val	Asp	Val	Phe	Ile	Glu	Leu	Glu	Glu	Gly	Asp	Lys	Tyr	Tyr	Leu
				245					250						255
Arg	Asn	Val	Thr	Trp	Val	Gly	Asn	Thr	Leu	Tyr	Pro	Ser	Glu	Gln	Leu
			260					265					270		
Asn	Tyr	Met	Leu	Arg	Met	Lys	Lys	Gly	Asp	Val	Tyr	Asn	Gln	Lys	Leu
			275				280						285		
Leu	Asn	Glu	Arg	Leu	Ser	Thr	Asp	Glu	Asp	Ala	Ile	Gly	Asn	Leu	Tyr
			290			295					300				
Tyr	Asn	Asn	Gly	Tyr	Leu	Phe	Tyr	Thr	Leu	Asp	Pro	Val	Glu	Val	Asn
305					310					315					320
Ile	Asp	Asn	Asp	Ser	Ile	Asp	Leu	Glu	Met	Arg	Ile	Phe	Glu	Gly	Arg
				325					330					335	
Gln	Ala	Ser	Ile	Asn	Lys	Ile	Lys	Ile	Asn	Gly	Asn	Asp	Arg	Leu	Tyr
			340					345					350		
Glu	Asn	Val	Val	Arg	Arg	Glu	Leu	Arg	Thr	Arg	Pro	Gly	Glu	Leu	Phe
			355				360					365			
Ser	Arg	Glu	Asp	Leu	Met	Arg	Ser	Met	Arg	Glu	Ile	Gln	Gln	Met	Gly

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

370	375	380
His Phe Asp Pro Glu Asn Ile Lys Pro Asp Ile Gln Pro Asp Pro Val		
385	390	395
Asn Gly Thr Val Asp Ile Ala Tyr Asp Leu Val Ser Lys Ala Asn Asp		400
	405	410
Gln Val Glu Phe Ser Ala Gly Trp Gly Gln Thr Gly Val Ile Gly Lys		415
	420	425
Leu Ser Leu Lys Phe Thr Asn Phe Ser Leu Ala Asn Leu Leu His Pro		430
	435	440
Gly Glu Asn Tyr Arg Gly Ile Leu Pro Gln Gly Asp Gly Gln Thr Leu		445
	450	455
Thr Ile Ser Gly Gln Thr Asn Ala Gln Tyr Tyr Gln Gln Tyr Ser Ile		460
465	470	475
Ser Phe Phe Asp Pro Trp Phe Gly Gly Lys Arg Pro Asn Ser Phe Ser		480
	485	490
Leu Ser Ala Phe Phe Ser Val Gln Thr Asp Ile Ser Ser Arg Tyr Tyr		495
	500	505
Asn Ser Ser Tyr Tyr Asn Asn Tyr Tyr Asn Ser Tyr Tyr Ser Gly Leu		510
	515	520
Gly Gly Tyr Gly Met Tyr Asn Tyr Gly Asn Tyr Asn Asn Tyr Glu Asn		525
	530	535
Tyr Tyr Asp Pro Asp Lys Ser Ile Lys Met Trp Gly Leu Ser Ala Gly		540
545	550	555
Trp Gly Lys Arg Leu Asn Trp Pro Asp Asp Tyr Phe Gln Leu Ser Ala		560
	565	570
Glu Leu Ser Tyr Gln Arg Tyr Ile Leu Lys Asp Trp Gln Tyr Phe Pro		575
	580	585
Val Thr Asn Gly Lys Cys Asn Asp Leu Ser Ile Gly Leu Thr Leu Ala		590
	595	600
Arg Ala Ser Tyr Asp Asn Pro Ile Tyr Pro Arg Ser Gly Ser Asp Phe		605
	610	615
Ser Leu Ser Val Gln Phe Thr Pro Pro Tyr Ser Leu Phe Asp Gly Val		620
625	630	635
Asp Tyr Ser Lys Tyr Asn Glu Tyr Asn Gln Asn Asp Met Asn Lys Met		640
	645	650
His Lys Trp Val Glu Tyr His Lys Trp Lys Phe Lys Ala Lys Thr Tyr		655
	660	665
Ile Pro Leu Leu Asn Pro Thr Val Lys Lys Thr Pro Val Leu Met		670
	675	680
Thr Arg Val Glu Phe Gly Ile Leu Gly His Tyr Asn Lys Tyr Lys Lys		685
	690	695
Ser Pro Phe Gly Thr Phe Asp Val Gly Gly Asp Gly Met Thr Gly Tyr		700
705	710	715
Ser Ser Tyr Ala Thr Glu Ser Val Ala Leu Arg Gly Tyr Glu Asn Ser		720
	725	730
Ser Leu Thr Pro Tyr Arg Gly Gln Glu Gly Tyr Ala Tyr Thr Arg Ile		735
	740	745
Gly Phe Glu Leu Arg Tyr Pro Leu Met Leu Glu Thr Ser Thr Asn Ile		750
	755	760
Tyr Ala Leu Thr Phe Leu Glu Ala Gly Asn Ala Trp His Asp Val Lys		765
	770	775
Asn Phe Asn Pro Phe Asp Leu Lys Arg Ser Ala Gly Val Gly Val Arg		780
785	790	795
Ile Phe Leu Pro Met Ile Gly Met Met Gly Ile Asp Trp Ala Tyr Gly		800
	805	810
Phe Asp Lys Val Leu Gly Asp Lys Ser Ala Gly Gly Ser Arg Phe His		815
	820	825
Phe Val Leu Gly Gln Glu Phe		830
835		

<210> 8850  
 <211> 297  
 <212> PRT  
 <213> B.fragilis

<400> 8850

His	Lys	Pro	Lys	Ile	Lys	Leu	Arg	Met	Lys	Val	Lys	Thr	Ser	Ile	Leu
1				5					10					15	
Leu	Leu	Leu	Met	Ile	Ala	Thr	Ala	Leu	Pro	Ser	Phe	Gly	Gly	Asn	Gly
			20					25					30		
Asn	Gly	Asn	Gly	Thr	Asp	Ser	Leu	Gln	Ala	Thr	Arg	Tyr	Val	Thr	Arg
			35				40					45			
Ala	Thr	Met	Tyr	Gly	Val	Gly	Tyr	Thr	Asn	Val	Phe	Asp	Thr	Tyr	Leu
	50					55					60				
Ser	Pro	Gln	Glu	Tyr	Lys	Gly	Ile	Glu	Phe	Arg	Ile	Ser	Arg	Glu	Thr
65					70					75				80	
Met	Arg	Met	Thr	Thr	Leu	Gly	Asp	Gly	Asn	Val	Ser	Val	Gln	Asn	Phe
				85					90					95	
Phe	Gln	Ala	Asn	Leu	Ala	Tyr	Thr	His	Asn	Arg	Val	Asp	Asn	Asn	Asn
			100					105					110		
Thr	Phe	Ala	Gly	Leu	Val	Asn	Trp	Asn	Tyr	Gly	Leu	His	Tyr	Gln	Phe
			115				120					125			
Arg	Ile	Thr	Asp	Asn	Phe	Lys	Leu	Leu	Ala	Gly	Gly	Met	Gly	Asp	Phe
	130					135					140				
Asn	Gly	Gly	Phe	Val	Tyr	Asn	Leu	Arg	Asn	Thr	Asn	Asn	Pro	Ala	Ser
145					150					155					160
Ala	Arg	Ala	Tyr	Ile	Asn	Leu	Asp	Ala	Ser	Gly	Met	Ala	Ile	Trp	His
				165					170					175	
Thr	Lys	Ile	Lys	Asn	Tyr	Pro	Leu	Ala	Leu	Arg	Tyr	Gln	Val	Asn	Leu
			180					185					190		
Pro	Val	Ile	Gly	Val	Met	Phe	Ser	Pro	His	Tyr	Gly	Gln	Ser	Tyr	Tyr
			195				200					205			
Glu	Ile	Phe	Thr	Leu	Gly	His	Ala	Ser	Gly	Val	Val	Arg	Phe	Thr	Ser
	210					215					220				
Leu	His	Asn	Gln	Pro	Ala	Leu	Arg	Gln	Met	Leu	Ser	Val	Asp	Phe	Pro
225					230					235					240
Ile	Arg	Tyr	Thr	Lys	Met	Arg	Leu	Ser	Tyr	Leu	Cys	Asp	Leu	Gln	Gln
				245					250					255	
Ser	Lys	Leu	Asn	Gly	Ile	Lys	Thr	His	Thr	Tyr	Ser	Gln	Val	Phe	Met
			260					265					270		
Val	Gly	Phe	Val	His	Asp	Leu	Phe	Arg	Ile	Arg	Asn	Lys	Asn	Gly	Thr
		275					280					285			
Pro	Leu	Pro	Pro	Ala	Val	Arg	Ala	Tyr							
	290					295									

<210> 8851  
 <211> 702  
 <212> PRT  
 <213> B.fragilis

<400> 8851

Leu	Asp	Ala	Lys	Ile	Lys	Lys	Asn	Lys	Cys	Pro	Asn	Ala	Ile	Ser	Thr
1				5					10					15	
Leu	Lys	Ile	Lys	Leu	Ser	Leu	Gln	Leu	Ser	Arg	Leu	Leu	Lys	Asn	Met
			20					25					30		
Ser	Ser	Lys	Pro	Tyr	Arg	His	Phe	Ile	Ala	Leu	Leu	Leu	Val	Leu	Phe
		35					40					45			
Cys	Ser	Arg	Phe	Glu	Ala	Gln	Ala	Glu	Asp	Leu	Phe	Ala	Lys	Thr	Asp



50	55	60
Ser Thr Leu Gln Gln Tyr	Leu Ile Arg Cys Lys Ala	Gln Ile Lys Asp
65	70	75
Pro Asp Phe Leu Gln Thr	Asn Asp Thr Leu Thr Arg	Met Ala Gln Glu
85	90	95
Lys Asn Asp Lys Arg Met	Gln Val Ile Ala Val Ala	Leu Lys Leu Asp
100	105	110
Tyr Tyr Tyr Tyr Gln Asn	Asn Pro Asp Ser Ile Leu	Val Met Val Asp
115	120	125
Arg Val Lys Lys Ile Ser	Arg Arg Asn Asn Glu Leu	Lys Tyr Phe Tyr
130	135	140
Phe Ala Trp Gly Ser Arg	Leu Ile Ile Tyr Tyr Ile	Lys Gln His Gln
145	150	155
Thr Asn Thr Ala Ile Tyr	Glu Ala Arg Lys Met Leu	Gln Ser Ala Glu
165	170	175
Ala Asp Asn Phe Ile Pro	Gly Ile Val Gln Cys Tyr	Arg Thr Leu Gly
180	185	190
Thr Val Tyr Met Thr Gln	Ser Asn Pro Lys Leu Ala	Tyr Glu Asn Phe
195	200	205
Arg Lys Gln Ile Ala Leu	Ile Glu Glu Asn Glu Ile	Glu Asp Ile Asn
210	215	220
Leu Pro Thr Gln Tyr Ala	Ser Leu Ala Gln Cys Ala	Leu Glu Met His
225	230	235
Arg Pro Asp Glu Ala Leu	Lys Ala Leu Glu Lys Gly	Ser Lys Cys Thr
245	250	255
Arg Ser Ser Tyr Gln Ile	Phe Thr Val Gln Lys Ala	Tyr Ile Leu Tyr
260	265	270
Tyr Leu Glu Thr Lys Glu	Tyr Glu Lys Ala Arg Lys	Thr Leu Val Glu
275	280	285
Leu Glu Gln Leu Phe Glu	Lys Asp Lys Ser Leu Thr	Leu Tyr Lys Ser
290	295	300
Gly Leu Phe Tyr Ile Gln	Ile Glu Tyr Tyr Arg Asn	Thr Gly Gln Tyr
305	310	315
Arg Lys Ala Leu Asp Val	Ile Glu Glu Ile Lys Asn	Asp Ser Ser Ser
325	330	335
Ile Asn Lys Tyr Leu Asp	Tyr Thr Leu Thr Gln Lys	Gln Gly Asp Ile
340	345	350
Tyr Trp Glu Met Asn Gln	Lys Ala Arg Ala Ala Gln	Tyr Tyr Arg Asp
355	360	365
Tyr Ile Leu Ala Thr Asp	Ser Ile Arg Ser Gln Glu	Ile Gln Asn Ser
370	375	380
Thr Asn Glu Phe Tyr Thr	Ile Met Glu Val Glu Gln	Leu His Lys Glu
385	390	395
Lys Asn Glu Leu Leu Leu	His Met Gln Glu Glu Lys	Leu Gln Lys Ile
405	410	415
Asn Ile Ala Leu Val Ser	Leu Val Ile Ile Leu Val	Ala Gly Thr Met
420	425	430
Leu Leu Phe His Ile Ser	Lys Leu Asn Lys Lys Leu	Lys Arg Ser Glu
435	440	445
Ala Lys Val Ile Gln Gln	Asn Lys Glu Leu Val Glu	Asn Gly Glu Glu
450	455	460
Leu Arg Lys Ala Lys Glu	Gln Ala Glu Asn Ala Ser	Arg Met Lys Thr
465	470	475
Thr Phe Ile Gln Ser Met	Ser His Glu Ile Arg Thr	Pro Leu Asn Ser
485	490	495
Ile Val Gly Phe Ser Gln	Val Leu Ser Asn Tyr Phe	Lys Glu Glu Asp
500	505	510
Asn Asp Glu Ile Arg Glu	Phe Ala Ser Ile Ile Glu	Ile Ser Ser Ser
515	520	525

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Asn Leu Leu Arg Leu Ile Asn Asp Val Leu Asp Ile Ser Tyr Leu Asp  
 530 535 540  
 Gln Ser Glu Ile Leu Pro Tyr Asp Lys Pro Glu Asp Ile Asn Asn Cys  
 545 550 555 560  
 Cys Leu Leu Ser Ile Glu Arg Thr Arg Asn Ser Ile Lys Lys Glu Val  
 565 570 575  
 Ser Leu Arg Phe Glu Pro Ser Cys Gly Pro Leu Met Ile Leu Thr Asn  
 580 585 590  
 Pro Glu Arg Val Ala Gln Ile Leu Thr His Leu Leu His Asn Ala Ile  
 595 600 605  
 Lys Phe Thr Asp Lys Gly Asn Ile Thr Leu Ala Tyr Thr Ile Ser Pro  
 610 615 620  
 Thr Glu Lys Gln Ile Val Tyr Thr Val Thr Asp Thr Gly Lys Gly Ile  
 625 630 635 640  
 Pro Val Glu Gln Gln Glu Tyr Val Phe Glu Arg Phe Ala Lys Leu Asn  
 645 650 655  
 Asp Phe Ser Gln Gly Thr Gly Leu Gly Leu Pro Ile Cys Arg Ile Ile  
 660 665 670  
 Ala Glu Lys Leu Gly Gly Ser Leu Ile Ile Asp Lys Thr Tyr Thr Lys  
 675 680 685  
 Gly Cys Arg Phe Ile Leu Thr Leu Pro Leu Ile Lys Ala Asp  
 690 695 700

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 <213> B.fragilis

<400> 8852  
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 Ala Asp Val Arg Thr Ile Leu Arg Glu Ala Leu Ile Gly Arg Ala Thr  
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 Gln Ile Ala Leu Ile His Asn His Pro Ser Gly His Ala Lys Pro Ser  
 35 40 45  
 Gln Glu Asp Lys Arg Leu Thr Gly Ala Ile Gln Lys Ala Ser Gln Thr  
 50 55 60  
 Met Asn Ile Thr Leu Val Asp His Val Ile Val Cys Asp Gly Cys Phe  
 65 70 75 80  
 Tyr Ser Phe Ala Asp Glu Gly Leu Ile  
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 Arg Pro Arg Glu Lys Met Met Ala Lys Gly Ser Glu Ala Leu Ser Asp  
 20 25 30  
 Ala Glu Leu Leu Gly Ile Leu Ile Gly Ser Gly Asn Thr Glu Glu Ser  
 35 40 45  
 Ala Val Glu Leu Met Arg Arg Ile Leu Ala Thr Cys Asp Asn Asn Leu  
 50 55 60  
 Asn Glu Leu Gly Lys Trp Glu Val Arg Asn Phe Ser Ser Phe Lys Gly  
 65 70 75 80  
 Met Gly Pro Ala Lys Ser Leu Thr Ile Met Ala Ala Leu Glu Leu Gly

				85					90					95			
Lys	Arg	Arg	Lys	Leu	Gln	Glu	Ser	Lys	Glu	Arg	Glu	Gln	Ile	Arg	Cys		
			100					105					110				
Ser	Glu	Asp	Ile	Tyr	Lys	Leu	Phe	His	Pro	Leu	Met	Cys	Asp	Leu	Pro		
		115					120					125					
Gln	Glu	Glu	Phe	Trp	Ile	Leu	Leu	Leu	Asn	Gln	Ala	Cys					
	130					135					140						

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Arg	Met	Asn	Lys	Lys	Ile	Tyr	Leu	Leu	Pro	Leu	Leu	Leu	Leu	Ala	Leu		
1			5					10						15			
Ile	Phe	Val	Ser	Cys	Glu	Glu	Thr	Lys	Glu	Ala	Thr	Lys	Phe	Asp	Asn		
		20					25					30					
Trp	Arg	Ala	Arg	Asn	Glu	Gly	Tyr	Ile	Asp	Ser	Leu	Lys	Thr	Val	Phe		
	35					40					45						
Asp	Glu	Lys	Thr	Asp	Pro	Glu	Leu	Lys	Ala	Phe	Glu	Pro	Glu	Ile	Asn		
	50					55					60						
Pro	Lys	Leu	Arg	Ile	Tyr	Tyr	Lys	Lys	Lys	Ile	Ser	Asn	Asp	Thr	Gly		
65				70						75					80		
Ala	Ile	Pro	Leu	Tyr	Thr	Asp	Ser	Val	Asn	Val	Phe	Tyr	Arg	Gly	Ser		
			85					90					95				
Phe	Ile	Phe	Gly	Glu	Thr	Phe	Asp	Gln	Asn	Phe	Thr	Gly	Ala	Asp	Pro		
		100					105					110					
Gly	Pro	Phe	Asp	Ser	Pro	Thr	Lys	Phe	Val	Ile	Gln	Thr	Phe	Ile	Thr		
		115				120					125						
Val	Gly	Gly	Val	Ser	Gly	Trp	Ala	Glu	Ile	Leu	Gln	Arg	Met	Arg	Val		
	130					135					140						
Gly	Glu	Arg	Trp	Leu	Val	Tyr	Ile	Pro	Trp	Glu	Leu	Ala	Tyr	Gly	Ala		
145				150						155				160			
Ser	Gly	Thr	Asp	Asp	Ile	Pro	Gly	Tyr	Ser	Thr	Leu	Ile	Phe	Asp	Met		
			165					170						175			
Gln	Leu	Glu	Glu	Ile	Leu	Asp	Glu										
		180															

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Ile	Lys	Asn	Lys	Asn	Met	Asn	Ser	Asn	Ile	Glu	Lys	Ser	Asp	Lys	Pro		
1			5					10					15				
Ser	Phe	Ile	Lys	Ile	Ser	Glu	Gln	Pro	Ser	Leu	Tyr	Asp	Asp	Leu	Glu		
		20					25					30					
Lys	Lys	Ser	Ile	Arg	Glu	Ile	Leu	Glu	Asp	Ile	Asn	Lys	Glu	Asp	Gln		
	35					40					45						
Lys	Val	Ala	Ile	Ala	Val	Gln	Lys	Ala	Ile	Pro	Gln	Ile	Glu	Lys	Leu		
	50					55					60						
Val	Thr	Gln	Ile	Val	Pro	Arg	Met	Lys	Gln	Gly	Gly	Arg	Ile	Phe	Tyr		
65				70					75					80			
Met	Gly	Ala	Gly	Thr	Ser	Gly	Arg	Leu	Gly	Val	Leu	Asp	Ala	Ser	Glu		
			85					90					95				
Ile	Pro	Pro	Thr	Phe	Gly	Met	Pro	Pro	Thr	Leu	Ile	Ile	Gly	Leu	Ile		
		100						105					110				

Ala Gly Gly Asp Thr Ala Leu Arg Asn Pro Val Glu Asn Ala Glu Asp  
 115 120 125  
 Asn Thr Ile Arg Gly Trp Glu Glu Leu Thr Glu His Asn Ile Asn Asp  
 130 135 140  
 Lys Asp Thr Val Ile Gly Ile Ala Ala Ser Gly Thr Thr Pro Tyr Val  
 145 150 155 160  
 Ile Gly Ala Met His Ala Ala Arg Glu His Gly Ile Leu Thr Gly Cys  
 165 170 175  
 Ile Thr Ser Asn Pro Asn Ser Pro Met Ala Ala Glu Ala Asp Ile Pro  
 180 185 190  
 Ile Glu Met Ile Val Gly Pro Glu Tyr Val Thr Gly Ser Ser Arg Met  
 195 200 205  
 Lys Ser Gly Thr Gly Gln Lys Met Ile Leu Asn Met Ile Thr Thr Ser  
 210 215 220  
 Val Met Ile Gln Leu Gly Arg Val Lys Gly Asn Lys Met Val Asn Met  
 225 230 235 240  
 Gln Leu Ser Asn Arg Lys Leu Val Asp Arg Gly Thr Arg Met Ile Ile  
 245 250 255  
 Glu Glu Leu Gly Leu Glu Tyr Asn Lys Ala Lys Ala Leu Leu Leu Met  
 260 265 270  
 His Gly Ser Val Lys Lys Ala Ile Asp Ala Tyr Lys Ala Gly  
 275 280 285

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<400> 8856

Met Asn Val Asn Arg Leu Leu Gly Ile Leu Ala Ile Leu Leu Leu Thr  
 1 5 10 15  
 Ala Ala Ser Ala Leu Tyr Ala Gln Lys Pro Val Lys Val Lys Gly Val  
 20 25 30  
 Gln Gly Arg Trp Gln Val Ser Asp Asp Ile Thr Leu Lys Gln Ala Glu  
 35 40 45  
 Glu Arg Ala Phe Met Glu Ala Lys Lys Ala Ala Leu Gln Lys Ala Gly  
 50 55 60  
 Val Met Glu Asn Val Trp Ser Val Phe Gly Gln Ile Thr Gln Glu Asp  
 65 70 75 80  
 Gly Gln Glu Leu His Glu Ala Tyr Ser Gln Met Asn Val Leu Ala Ile  
 85 90 95  
 Gly Gly Met Val Asn Val Thr Asn Lys Lys Val Glu Glu Val Trp Asp  
 100 105 110  
 Thr Asp Thr Arg Ser Leu Tyr Lys Val Val Thr Ile Asp Ala Glu Val  
 115 120 125  
 Arg Lys Glu Asp Lys Ser Asp Ser Ser Tyr Ala Leu Glu Val Lys Gly  
 130 135 140  
 Val Glu Thr Leu Tyr Arg Glu Gly Asp Val Phe His Cys Lys Leu Thr  
 145 150 155 160  
 Ile His Gly Thr Asp Ser Tyr Leu Lys Phe Phe Trp Phe Asp Ser Asn  
 165 170 175  
 Gly Gly Ala Leu Leu Tyr Pro Asn Ser Tyr Glu Pro Asn Thr Leu Leu  
 180 185 190  
 Lys Ala Gly Lys Glu Tyr Ala Ile Pro Phe Ser Asn Ala Val Asp Tyr  
 195 200 205  
 Arg Met Glu Lys Gln His Gly Lys Glu Ser Glu Lys Ile Asn Met Met  
 210 215 220  
 Met Val Ala Thr Lys Glu Asp Ile Pro Phe Thr Lys Glu Val Thr Tyr  
 225 230 235 240

Gln Asn Val Leu Glu Trp Val Tyr Ser Ile Pro Ala Val Gln Arg Cys  
 245 250 255  
 Ala Phe Tyr Asp Met Val Leu Ile Lys  
 260 265

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 <211> 76  
 <212> PRT  
 <213> B.fragilis

<400> 8857  
 Ser Met Lys Asn Ala Lys Ile Thr Ile Gly Leu Ile Gly Leu Leu Leu  
 1 5 10 15  
 Ile Gly Leu Val Ser Val Arg Lys Glu Gly Lys Val Gln Glu Ala Gly  
 20 25 30  
 Leu Leu Leu Gln Asn Val Glu Ala Leu Ala Thr Gly Glu Ser Phe Pro  
 35 40 45  
 Asp Gly Asp Ile Ala Cys Ile Gly Asp Gly Ser Val Asp Cys Pro Phe  
 50 55 60  
 Thr Tyr Leu Lys Val Glu Val Val Tyr Arg Glu Glu  
 65 70 75

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 Leu Asn Arg Lys Ser Asp Met Lys Val Leu Val Leu Asn Cys Gly Ser  
 1 5 10 15  
 Ser Ser Ile Lys Tyr Lys Leu Phe Asp Met Asp Ser Lys Glu Val Ile  
 20 25 30  
 Ala Gln Gly Gly Ile Glu Lys Ile Gly Leu Lys Asp Ser Phe Leu Lys  
 35 40 45  
 Leu Thr Leu Pro Asn Gly Glu Lys Lys Ile Leu Glu Lys Asp Ile Pro  
 50 55 60  
 Glu His Thr Val Gly Val Glu Phe Ile Leu Asn Thr Leu Val Ser Pro  
 65 70 75 80  
 Glu Tyr Gly Ala Ile Gln Ser Leu Glu Glu Ile Asn Ala Val Gly His  
 85 90 95  
 Arg Met Val His Gly Gly Glu Arg Phe Ser Lys Ser Val Leu Leu Thr  
 100 105 110  
 Lys Glu Val Leu Glu Ala Phe Ala Ala Cys Asn Asp Leu Ala Pro Leu  
 115 120 125  
 His Asn Pro Ala Asn Leu Lys Gly Val Asp Ala Ile Thr Ala Ile Leu  
 130 135 140  
 Pro Asn Val Pro Gln Ile Gly Val Phe Asp Thr Ala Phe His Gln Thr  
 145 150 155 160  
 Met Pro Glu His Ala Tyr Leu Tyr Ala Ile Pro Tyr Glu Leu Tyr Lys  
 165 170 175  
 Lys Tyr Gly Val Arg Arg Tyr Gly Phe His Gly Thr Ser His Arg Tyr  
 180 185 190  
 Val Ser Gln Arg Val Cys Glu Tyr Leu Gly Ile Lys Pro Glu Gly Leu  
 195 200 205  
 Lys Leu Ile Thr Cys His Ile Gly Asn Gly Gly Ser Ile Ala Ala Ile  
 210 215 220  
 Lys Asp Gly Lys Cys Ile Asp Thr Ser Met Gly Leu Thr Pro Leu Glu  
 225 230 235 240  
 Gly Leu Met Met Gly Thr Arg Ser Gly Asp Ile Asp Ala Gly Ala Val

8857 8858 404 PRT B.fragilis

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<212> PRT
<213> B.fragilis
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Ala	Tyr	Met	Lys	Ser	Thr	Ile	Asn	Cys	Phe	Ile	Pro	Tyr	Ala	Gly	Ala
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Val	Gln	Ala	Glu	Arg	Thr	Val	Gln	Gly	Leu	Gln	Ala	Thr	Gly	Leu	Val
			20					25					30		
Lys	Lys	Ile	Tyr	Leu	Leu	Val	Thr	Ser	Pro	Ser	Phe	Asp	Pro	Leu	Pro
		35					40					45			
Gly	Cys	Glu	Leu	Leu	Tyr	Val	Asp	Lys	Leu	Thr	Asn	Ser	Ala	Ser	Met
	50					55					60				
Tyr	Ala	Ile	Ala	Thr	Tyr	Ser	Asp	Ala	Ser	Tyr	Thr	Leu	Leu	Tyr	Thr
65					70					75				80	
Lys	Tyr	Thr	Ser	Leu	Glu	Leu	Gly	Leu	Phe	Ala	Leu	Glu	Arg	Met	Ile
				85					90					95	
His	Ile	Ala	Glu	Asp	Ser	Ala	Ala	Gly	Met	Val	Tyr	Ala	Asp	His	Tyr
			100					105					110		
Gln	Val	Thr	Glu	Gly	Lys	Gln	Ser	Asn	Ala	Pro	Val	Ile	Asp	Tyr	Gln
		115					120					125			
Phe	Gly	Ser	Leu	Arg	Asp	Asp	Phe	Asn	Phe	Gly	Ser	Val	Leu	Leu	Phe
	130					135					140				
Lys	Ala	Ser	Ala	Leu	Lys	Glu	Ala	Ala	Lys	Arg	Met	Lys	Ser	Asp	Tyr
145					150					155				160	
Asp	Phe	Ala	Gly	Phe	Tyr	Asp	Leu	Arg	Leu	Lys	Leu	Ser	Gln	Lys	Tyr
				165					170					175	
Pro	Leu	Val	His	Ile	Asn	Glu	Tyr	Leu	Tyr	Ser	Glu	Val	Glu	Asn	Asp
			180					185					190		
Thr	Arg	Lys	Ser	Gly	Glu	Lys	Ile	Phe	Asp	Tyr	Val	Asp	Pro	Lys	Asn
		195					200					205			
Arg	Asp	Arg	Gln	Ile	Glu	Met	Glu	Glu	Ala	Cys	Thr	Glu	His	Leu	Gln
	210					215					220				
Glu	Ile	Gly	Gly	Tyr	Leu	Lys	Pro	Glu	Phe	Gln	Lys	Ile	Glu	Phe	Asn
225					230					235					240
Thr	Gly	Asn	Phe	Pro	Tyr	Glu	Ala	Ser	Val	Ile	Ile	Pro	Val	Arg	Asn

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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			20					25					30		
Leu	Leu	Leu	Asn	Pro	Ile	Leu	Leu	Thr	Ile	Ala	Val	Ile	Ile	Ile	Phe
		35					40					45			
Leu	Lys	Leu	Thr	Asn	Ile	Ser	Phe	Glu	Thr	Tyr	Asn	His	Gly	Gly	His
	50					55					60				
Leu	Ile	Glu	Phe	Trp	Leu	Lys	Pro	Ala	Val	Val	Ala	Leu	Gly	Val	Pro
65					70					75					80
Leu	Tyr	Leu	Gln	Leu	Glu	Thr	Ile	Lys	Lys	Gln	Leu	Leu	Pro	Ile	Ile
				85					90					95	
Leu	Ser	Gln	Leu	Ala	Gly	Cys	Ile	Val	Gly	Val	Ile	Ser	Val	Val	Leu
			100					105					110		
Ile	Ala	Lys	Leu	Met	Gly	Ala	Ser	Gln	Glu	Val	Ile	Leu	Ser	Leu	Ala
		115					120					125			
Pro	Lys	Ser	Val	Thr	Thr	Pro	Ile	Ala	Met	Glu	Val	Thr	Lys	Thr	Leu
	130					135					140				
Gly	Gly	Ile	Pro	Ser	Leu	Thr	Ala	Ala	Val	Val	Val	Cys	Val	Gly	Leu
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Leu	Gly	Ala	Val	Leu	Gly	Phe	Lys	Thr	Met	Lys	Ile	Met	His	Val	Gly

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[illegible]



340

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 <213> B.fragilis

<400> 8862

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Thr	Thr	Ile	Met	Lys	Glu	Pro	Lys	Val	Gln	Val	Gly	Ile	Leu	Phe	Glu
			20					25					30		
Pro	Gln	Ile	Lys	Phe	Ile	Leu	Leu	Thr	Pro	Tyr	His	Ile	Asn	Gly	Glu
			35				40					45			
Glu	Val	Ser	Gly	Lys	Gln	Val	Val	Thr	Tyr	Asp	Asn	Gly	His	Ile	Leu
			50			55					60				
Trp	Gln	Gly	His	Ser	Tyr	Asp	Glu	Leu	Leu	Phe	Glu	Pro	Leu	His	Glu
65					70					75					80
Lys	Ser	Asp	Ala	Phe	Glu	Leu	Gln	Asp	Val	Thr	Ile	Gly	Ile	Asn	Phe
				85					90					95	
His	Trp	Glu	Arg	Lys	Glu	Asn	Gln	Arg	Phe	Ile	Gly	Ala	Leu	Lys	Ile
			100					105					110		
Ile	Val	Glu	Asn	Lys	Lys	Leu	Thr	Gly	Ile	Asn	Val	Ile	His	Val	Glu
			115				120					125			
Asp	Tyr	Leu	Thr	Ser	Val	Ile	Ser	Ser	Glu	Met	Ser	Ala	Thr	Ala	Ser
						135					140				
Leu	Glu	Leu	Leu	Lys	Ala	His	Ala	Val	Ile	Ser	Arg	Ser	Trp	Leu	Leu
145					150					155					160
Ala	Gly	Leu	Ser	Leu	Pro	Tyr	Ser	Lys	Asp	Arg	Glu	Lys	Ser	Asn	Thr
				165					170					175	
Thr	Pro	Glu	Lys	Val	Pro	Tyr	Ser	Thr	Ser	Ser	Phe	Pro	Pro	Leu	Ala
				180				185						190	
Gln	Glu	Ala	Glu	Asn	Lys	Ile	Leu	Ile	Arg	Trp	Tyr	Glu	Arg	Asp	Ala
			195				200					205			
His	Thr	His	Phe	Asp	Val	Cys	Ala	Asp	Asp	His	Cys	Gln	Arg	Tyr	Gln
			210			215					220				
Gly	Ile	Thr	Arg	Ala	Ser	Thr	Asp	Met	Val	Arg	Gln	Ala	Ile	Ser	Ala
225					230					235					240
Thr	Arg	Gly	Glu	Val	Leu	Met	Ser	Glu	Gly	Thr	Ile	Cys	Asp	Ala	Arg
				245					250					255	
Phe	Ser	Lys	Cys	Cys	Gly	Gly	Ala	Phe	Glu	Glu	Phe	Gln	Tyr	Cys	Trp
			260					265					270		
Glu	Asn	Ile	Arg	His	Pro	Tyr	Leu	Ser	Lys	Gln	Arg	Asp	Ser	Lys	Lys
			275				280					285			
Ala	Thr	Asp	Leu	Pro	Asp	Leu	Cys	Lys	Glu	Ala	Glu	Ala	Glu	Arg	Trp
			290			295					300				
Ile	Arg	Thr	Ser	Pro	Glu	Ala	Phe	Cys	Asn	Thr	Lys	Asp	Lys	Lys	Val
305					310					315					320
Leu	Ser	Gln	Val	Leu	Asn	Asn	Tyr	Asp	Gln	Glu	Thr	Thr	Asp	Phe	Tyr
				325					330					335	
Arg	Trp	Lys	Val	Glu	Tyr	Glu	Gln	Glu	Glu	Leu	Ser	Lys	Leu	Ile	Leu
			340					345					350		
Lys	Arg	Ser	Gly	Ile	Asp	Tyr	Gly	Gln	Ile	Leu	Asp	Leu	Val	Pro	Val
			355				360					365			
Glu	Arg	Gly	Thr	Ser	Gly	Arg	Leu	Val	Arg	Leu	Lys	Ile	Ile	Gly	Thr
			370			375					380				
Lys	Arg	Thr	Met	Ile	Ile	Gly	Lys	Glu	Leu	Glu	Ile	Arg	Arg	Thr	Leu
385					390					395					400
Ser	Pro	Ser	His	Leu	Tyr	Ser	Ser	Ala	Phe	Ile	Ile	Asp	Lys	Val	Asn

405 410 415  
 Val Thr Asn Gly Ile Pro Asp Arg Phe Ile Leu Thr Gly Ala Gly Trp  
 420 425 430  
 Gly His Gly Val Gly Leu Cys Gln Ile Gly Ala Ala Val Met Gly Glu  
 435 440 445  
 Gln Gly Tyr Thr Tyr Asp Thr Ile Leu Leu His Tyr Tyr Ile Gly Ala  
 450 455 460  
 Thr Ile Asp Lys Leu Tyr  
 465 470

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 Val Val Gly Leu Gly Gly Val Gly Ala Tyr Ala Ala Glu Met Ile Cys  
 35 40 45  
 Arg Ala Gly Val Gly Arg Met Thr Ile Val Asp Ala Asp Ile Val Gln  
 50 55 60  
 Pro Thr Asn Ile Asn Arg Gln Leu Pro Ala Thr His Ala Thr Leu Gly  
 65 70 75 80  
 Met Glu Lys Ala Lys Val Leu Glu Ala Arg Phe Arg Asp Ile Asn Pro  
 85 90 95  
 Glu Ile Glu Leu Thr Val Leu Pro Val Tyr Leu Lys Asp Asp Asn Ile  
 100 105 110  
 Pro Glu Leu Leu Asp Ala Ala Arg Tyr Asp Phe Ile Val Asp Ala Ile  
 115 120 125  
 Asp Thr Ile Ser Pro Lys Cys Tyr Leu Ile Tyr His Ala Leu Gln Arg  
 130 135 140  
 Arg Ile Lys Ile Ile Ser Ser Met Gly Ala Gly Ala Lys Ser Asp Ile  
 145 150 155 160  
 Thr Gln Val Arg Phe Ala Asp Leu Trp Asp Thr Tyr His Cys Gly Leu  
 165 170 175  
 Ser Lys Ala Val Arg Lys Arg Leu Gln Lys Met Gly Val Lys Arg Lys  
 180 185 190  
 Leu Pro Val Val Phe Ser Thr Glu Gln Ala Asp Pro Lys Ala Val Leu  
 195 200 205  
 Leu Thr Asp Asp Glu Arg Asn Lys Lys Ser Thr Cys Gly Thr Val Ser  
 210 215 220  
 Tyr Met Pro Ala Val Phe Gly Cys Tyr Leu Ala Glu Tyr Val Ile Lys  
 225 230 235 240  
 Arg Leu

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 <213> B.fragilis

<400> 8864  
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 Phe Thr Gly Ala Gln Ser Lys Ile Asn Leu Glu Cys Asp Val Ala Phe  
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Arg Thr His Met Cys Glu Arg Gly Val Val Pro Arg Asp Gly Leu Tyr  
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 Ser Ile Ser Ala Leu Arg Gly Ser Phe Thr Gly Thr Pro  
 50 55 60

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<211> 495

<212> PRT

<213> B.fragilis

<400> 8865

Gln Ile Met Glu Lys Lys Leu Lys Ser Trp Gln Gly Trp Leu Leu Phe  
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 Cys Gly Ala Met Ala Val Val Phe Val Leu Gly Leu Val Val Ser Ser  
 20 25 30  
 Leu Met Glu Arg Arg Ala Glu Thr Val Ser Val Phe Asn Asn Lys Arg  
 35 40 45  
 Val Glu Ile Thr Gly Ile Glu Ala Arg Asn Glu Val Phe Gly Glu Asn  
 50 55 60  
 Tyr Pro Arg Gln Tyr Glu Thr Trp Lys Glu Thr Ala Lys Thr Asp Phe  
 65 70 75 80  
 Lys Ser Glu Phe Asn Gly Asn Glu Ala Val Asp Val Leu Glu Gln Arg  
 85 90 95  
 Pro Glu Met Val Val Leu Trp Ala Gly Tyr Ala Phe Ser Lys Asp Tyr  
 100 105 110  
 Ser Thr Pro Arg Gly His Met His Ala Ile Glu Asp Ile Thr His Ser  
 115 120 125  
 Leu Arg Thr Gly Ala Pro Met Asp Asp Lys Ser Gly Pro Gln Pro Ser  
 130 135 140  
 Thr Cys Trp Thr Cys Lys Ser Pro Asp Val Pro Arg Met Met Glu Thr  
 145 150 155 160  
 Ile Gly Val Asp Ser Phe Tyr Asn Asn Lys Trp Gly Ala Phe Gly Ser  
 165 170 175  
 Glu Ile Val Asn Pro Ile Gly Cys Ala Asp Cys His Glu Pro Thr Asn  
 180 185 190  
 Met Lys Leu His Ile Ser Arg Pro Ala Leu Arg Glu Ala Phe Ala Arg  
 195 200 205  
 Gln Gly Lys Asp Ile Asp Lys Ala Thr Pro Gln Glu Met Arg Ser Leu  
 210 215 220  
 Val Cys Ala Gln Cys His Val Glu Tyr Tyr Phe Lys Gly Asp Gly Lys  
 225 230 235 240  
 Tyr Leu Thr Phe Pro Trp Asp Lys Gly Phe Ser Val Glu Asp Met Glu  
 245 250 255  
 Ala Tyr Tyr Asp Glu Ala Asp Phe Ala Asp Tyr Thr His Ala Leu Ser  
 260 265 270  
 Lys Ala Arg Ile Leu Lys Ala Gln His Pro Asp Tyr Glu Ile Ser Gln  
 275 280 285  
 Met Gly Ile His Ala Gln Arg Gly Val Ser Cys Ala Asp Cys His Met  
 290 295 300  
 Pro Tyr Lys Ser Glu Gly Gly Met Lys Phe Ser Asp His His Ile Gln  
 305 310 315 320  
 Ser Pro Leu Ala Met Ile Asp Arg Thr Cys Gln Val Cys His Arg Glu  
 325 330 335  
 Ser Glu Glu Thr Leu Arg Asn Asn Val Tyr Asp Arg Gln Arg Lys Ala  
 340 345 350  
 Asn Glu Ile Arg Gly Arg Leu Glu His Glu Leu Ala Lys Ala His Ile  
 355 360 365  
 Glu Ala Lys Phe Ala Trp Asp Lys Gly Ala Thr Asp Ala Gln Met Ala  
 370 375 380

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380

Glu	Ala	Leu	Lys	Leu	Ile	Arg	Gln	Ala	Gln	Trp	Arg	Trp	Asp	Phe	Gly
385					390					395					400
Val	Ala	Ser	His	Gly	Gly	Ala	Phe	His	Ala	Pro	Gln	Glu	Ile	Gln	Arg
				405					410					415	
Ile	Leu	Gly	His	Gly	Leu	Asp	Lys	Ala	Leu	Gln	Ala	Arg	Leu	Ala	Ile
			420					425					430		
Ser	Lys	Val	Leu	Ala	Gln	His	Gly	Tyr	Thr	Ala	Asp	Val	Pro	Met	Pro
		435					440					445			
Asp	Ile	Ser	Thr	Lys	Glu	Lys	Ala	Gln	Glu	Tyr	Ile	Gly	Leu	Asp	Met
	450					455					460				
Glu	Lys	Glu	Arg	Lys	Ala	Lys	Asp	Lys	Phe	Leu	Lys	Thr	Ile	Val	Pro
465					470					475					480
Glu	Trp	Leu	Glu	Lys	Ala	Arg	Ala	Asn	Gly	Arg	Leu	Ala	Lys	Leu	
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<211> 323
<212> PRT
<213> B.fragilis
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<400>	8866														
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Gln	Gln	Ala	Tyr 20	Glu	Gln	Val	Lys	Gly 25	Asn	Thr	Gly	Gly 30	Lys	Asn	Ala
Asp	Tyr 35	Ile	Pro	Tyr	Leu	Ala	Asn 40	Ile	Asp	Lys	Asn 45	Leu	Phe	Gly	Ile
Ser	Val 50	Cys	Leu	Leu	Asn	Gly 55	Gln	Thr	Ile	Thr	Val 60	Gly	Asp	Phe	Asp
Tyr 65	Arg	Phe	Gly	Ile 70	Glu	Ser	Val	Ser	Lys 75	Val	His	Thr	Ala	Ile	Leu 80
Ile	Leu	Arg	Gln 85	Tyr	Gly	Ala	Gln	Lys 90	Val	Leu	Glu	Met	Ile 95	Gly	Ala
Asp	Ala	Thr	Gly 100	Leu	Pro	Phe	Asn 105	Ser	Ile	Ile	Ala	Ile 110	Leu	Leu	Glu
Asn	Asp 115	His	Pro	Ser	Thr	Pro	Leu 120	Val	Asn	Ala	Gly 125	Ala	Ile	Ser	Ala
Cys	Ser 130	Met	Val	Thr	Pro	Ile 135	Gly	Asn	Ser	Asp	Lys 140	Lys	Trp	Asp	Ala
Ile 145	Val	Gln	Asn	Ile 150	Thr	Asp	Leu	Cys	Gly 155	Ser	Ala	Pro	Gln	Leu	Ile 160
Glu	Glu	Leu	Tyr 165	Lys	Ser	Glu	Thr	Ala 170	Thr	Asn	Phe	Asn 175	Asn	Arg	Ser
Ile	Ala	Trp 180	Leu	Lys	Asn	Tyr 185	Asn	Arg	Ile	Tyr	Asp 190	Asp	Pro	Asn	
Met	Ser 195	Leu	Asp	Leu	Tyr	Thr 200	Arg	Gln	Cys	Ser	Leu 205	Gly	Val	Thr	Ala
Gln	Met 210	Leu	Ser	Val	Ala	Ala 215	Gly	Thr	Val	Ala	Asn 220	Gly	Gly	Val	Asn
Pro 225	Val	Thr	Lys	Lys 230	Gln	Val	Phe	Asp	Ala 235	Glu	Leu	Thr	Pro	Lys	Ile 240
Thr	Ser	Met	Ile 245	Ala	Thr	Val	Gly	Phe 250	Tyr	Glu	His	Ser	Gly	Asp	Trp
Met	Tyr	Thr 260	Ser	Gly	Ile	Pro	Ala 265	Lys	Thr	Gly	Val	Gly 270	Gly	Gly	Val
Met	Gly 275	Val	Leu	Pro	Gly	Val	Phe 280	Gly	Val	Ser	Ala 285	Phe	Ala	Pro	Pro
Leu	Asp 290	Gly	Ser	Gly	Asn	Ser 295	Val	Lys	Ala 300	Gln	Leu	Ala	Ile	Lys	Tyr

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Ile Met Asn Lys Leu Gly Leu Asn Val Phe Asn Gly Ala Arg Val Thr  
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 Ile Val Asp

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 <211> 288  
 <212> PRT  
 <213> B.fragilis

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 Gln Lys Met Asp Ser Thr Ile Phe Lys Ser Leu Asn Val Asn Gly Arg  
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 Leu Leu Asp Leu Ser Ile Pro Gln Val Met Gly Ile Leu Asn Val Thr  
 20 25 30  
 Pro Asp Ser Phe Tyr Ala Gly Ser Arg Ser Arg Thr Glu Ala Asp Ile  
 35 40 45  
 Ala Ala Arg Ala Arg Gln Ile Leu Asp Glu Gly Ala Ser Met Ile Asp  
 50 55 60  
 Ile Gly Ala Tyr Ser Ser Arg Ser Asn Ala Glu His Ile Ser Pro Glu  
 65 70 75 80  
 Glu Glu Met Arg Arg Leu Arg Thr Gly Leu Glu Ile Leu Asn Arg Asn  
 85 90 95  
 His Pro Gly Ala Ile Ile Ser Val Asp Thr Phe Arg Ala Gly Val Ala  
 100 105 110  
 Glu Glu Cys Val Lys Glu Tyr Gly Val Ala Ile Ile Asn Asp Ile Ser  
 115 120 125  
 Ala Gly Glu Met Asp Glu Gln Met Phe Pro Thr Val Ala Arg Leu Asn  
 130 135 140  
 Val Pro Tyr Ile Met Met His Met Gln Gly Thr Pro Gln Asn Met Gln  
 145 150 155 160  
 Lys Glu Pro His Tyr Glu Asn Leu Leu Lys Glu Val Phe Ile Tyr Phe  
 165 170 175  
 Ala Arg Lys Val Gln Gln Leu Arg Asp Leu Gly Val Lys Asp Ile Ile  
 180 185 190  
 Leu Asp Pro Gly Phe Gly Phe Gly Lys Thr Leu Glu His Asn Tyr Glu  
 195 200 205  
 Leu Met Ala His Leu Glu Glu Phe Gly Ile Phe Glu Leu Pro Leu Leu  
 210 215 220  
 Val Gly Val Ser Arg Lys Ser Met Ile Tyr Arg Leu Phe Gly Thr Thr  
 225 230 235 240  
 Pro Gln Glu Ala Leu Asn Gly Thr Thr Val Leu Asp Thr Val Ala Leu  
 245 250 255  
 Met Lys Gly Ala Asp Ile Leu Arg Val His Asp Val Arg Glu Ala Val  
 260 265 270  
 Glu Ser Val Arg Leu Ile Glu Lys Leu Lys Ser Val Ser Ala Cys Ser  
 275 280 285

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 <211> 70  
 <212> PRT  
 <213> B.fragilis

<400> 8868  
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 Thr Met Leu Ile Glu Glu Arg Cys Lys Asn Glu Asp Thr Asp Ser Asp

35                      40                      45  
 Ser Val Asn Ser Leu Pro Glu Leu Glu Leu Ser Tyr Ser Ala Gly Ile  
 50                      55                      60  
 Cys Phe Phe Leu Leu Lys  
 65                      70

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 <212> PRT  
 <213> B.fragilis

<400> 8869

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 Thr Trp Val Phe Phe Leu Val Leu Ile Ile Ile Leu Phe Ala Pro Met  
 20                      25                      30  
 Ile Leu Gly Arg Leu His Ile Pro His Ile Ile Gly Met Ile Leu Ala  
 35                      40                      45  
 Gly Val Val Ile Gly Glu Tyr Gly Phe Asn Val Leu Glu Arg Asp Ser  
 50                      55                      60  
 Ser Phe Glu Leu Phe Gly Lys Val Gly Leu Tyr Tyr Ile Met Phe Leu  
 65                      70                      75                      80  
 Ala Gly Leu Glu Met Asp Met Glu Asp Phe Lys Lys Asn Arg Thr Lys  
 85                      90                      95  
 Gly Leu Val Phe Gly Trp Phe Thr Phe Ile Ile Pro Met Ala Leu Gly  
 100                      105                      110  
 Val Trp Ser Ser Met Glu Leu Leu Gly Tyr Gly Phe Thr Thr Ala Val  
 115                      120                      125  
 Leu Leu Ala Ser Met Tyr Ala Ser His Thr Leu Ile Ala Tyr Pro Ile  
 130                      135                      140  
 Ile Ser Arg Tyr Gly Leu Ser Arg Leu Arg Ser Val Asn Ile Thr Ile  
 145                      150                      155                      160  
 Gly Gly Thr Ala Val Thr Val Thr Leu Ala Leu Ile Ile Leu Ala Val  
 165                      170                      175  
 Ile Gly Gly Met Tyr Lys Gly Thr Val Asp Gly Met Phe Trp Val Leu  
 180                      185                      190  
 Leu Val Val Lys Val Ala Phe Leu Ser Phe Leu Ile Val Phe Phe Phe  
 195                      200                      205  
 Pro Arg Ile Gly Arg Trp Phe Arg Lys Tyr Asp Asp Ser Val Met  
 210                      215                      220  
 Gln Phe Val Phe Val Leu Ala Met Val Phe Leu Gly Ser Gly Leu Met  
 225                      230                      235                      240  
 Glu Phe Val Gly Met Glu Gly Ile Leu Gly Ala Phe Leu Ala Gly Leu  
 245                      250                      255  
 Val Leu Asn Arg Leu Ile Pro His Val Ser Pro Leu Met Asn Arg Leu  
 260                      265                      270  
 Glu Phe Val Gly Asn Ala Leu Phe Ile Pro Tyr Phe Leu Ile Gly Val  
 275                      280                      285  
 Gly Met Ile Ile Asp Val Arg Thr Leu Phe Thr Gly Gly Glu Ala Leu  
 290                      295                      300  
 Lys Val Ala Val Val Met Thr Val Phe Ala Thr Leu Ser Lys Trp Leu  
 305                      310                      315                      320  
 Ala Ala Trp Ile Thr Gln Lys Ile Tyr His Met Gln Pro Asn Glu Arg  
 325                      330                      335  
 Ser Met Met Phe Gly Leu Ser Asn Ala Gln Ala Ala Ala Thr Leu Ala  
 340                      345                      350  
 Ala Val Leu Ile Gly His Glu Ile Ile Met Glu Asn Gly Glu Arg Leu  
 355                      360                      365  
 Leu Asn Asp Asp Val Leu Asn Gly Thr Val Val Met Ile Leu Phe Thr

370 375 380  
 Cys Val Ile Ser Ser Leu Val Thr Glu Arg Ser Ala Arg Arg Phe Ala  
 385 390 395 400  
 Leu His Glu Glu Met Gln Phe Glu Asp Asn Lys Glu Lys Thr Glu Gln  
 405 410 415  
 Glu Gln Ile Leu Ile Pro Val Ala Asn Pro Asp Thr Ile Glu Asp Leu  
 420 425 430  
 Ile Asn Leu Ala Leu Val Ile Arg Asp Thr Lys Gln Lys Lys Glu Leu  
 435 440 445  
 Ile Ala Leu Asn Val Ile Asn Asp Asn Asn Asn Ser Glu Asn Lys Glu  
 450 455 460  
 Leu Gln Gly Lys Arg Asn Leu Glu Lys Ala Ala Met Ile Ala Ala Ser  
 465 470 475 480  
 Ala Asp Val Ser Val Asn Met Val Ser Arg Tyr Asp Leu Asn Ile Ala  
 485 490 495  
 Ser Gly Ile Ile His Thr Ile Lys Glu Tyr Asp Ala Thr Asp Val Val  
 500 505 510  
 Ile Gly Leu His Arg Lys Ala Asn Ile Val Asp Ser Phe Phe Gly Asn  
 515 520 525  
 Leu Ala Glu Ser Leu Leu Lys Gly Thr His Arg Glu Val Ile Ile Ala  
 530 535 540  
 Lys Phe Leu Met Pro Val Asn Thr Leu Arg Arg Ile Ile Ile Ala Val  
 545 550 555 560  
 Pro Pro Lys Ala Glu Tyr Glu Thr Gly Phe Ser Lys Trp Val Glu His  
 565 570 575  
 Phe Cys Arg Met Gly Ser Leu Leu Gly Cys Arg Val His Phe Phe Ala  
 580 585 590  
 Asn Glu Gln Thr Leu Met Arg Leu Gln Gln Leu Val Lys Lys Lys His  
 595 600 605  
 Gly Ser Thr Pro Thr Glu Phe Ser Arg Leu Asp Glu Trp Asp Asp Leu  
 610 615 620  
 Leu Leu Leu Thr Gly Gln Val Asn Phe Asp His Leu Leu Val Val Ile  
 625 630 635 640  
 Ser Ala Arg Arg Gly Ser Ile Ser Tyr Asp Pro Ser Phe Glu Arg Leu  
 645 650 655  
 Pro Asn Gln Leu Gly Lys Tyr Phe Ser Asn Asn Ser Leu Ile Ile Leu  
 660 665 670  
 Tyr Pro Asp Gln Phe Gly Glu Pro Gln Glu Ile Val Ser Phe Ser Asp  
 675 680 685  
 Pro Arg Gly Tyr Asn Glu Ser Gln His Tyr Asp Lys Val Gly Lys Trp  
 690 695 700  
 Phe Tyr Lys Trp Leu Lys Lys Asn  
 705 710

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 <212> PRT  
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 Glu Arg Asn Tyr Ser Ala Phe Leu Gln Asp Ile Gly Arg Phe Ile Pro  
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 Arg Asp Arg Leu Phe Thr Asp Glu Leu His Arg Leu Ala Trp Gly Thr  
 35 40 45  
 Asp Ala Gly Phe Tyr Arg Leu Ile Pro Gln Ile Val Ile His Ser Ile  
 50 55 60  
 Asn Asp Asp Glu Val Ile Glu Ile Ile Tyr Leu Ala Asp Arg Tyr Asn

Fractal	at $\beta$	smooth	if	if $\beta$ is small	if $\beta$ is large	if $\beta$ is very large
$\mathbb{R}^n$	1	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	2	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	3	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	4	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	5	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	6	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	7	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	8	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	9	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	10	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	11	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	12	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	13	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	14	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	15	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	16	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	17	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	18	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	19	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	20	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	21	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	22	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	23	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	24	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	25	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	26	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	27	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	28	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	29	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	30	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	31	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	32	Yes	Yes	Yes	Yes	Yes
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$\mathbb{R}^n$	34	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	35	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	36	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	37	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	38	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	39	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	40	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	41	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	42	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	43	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	44	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	45	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	46	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	47	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	48	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	49	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	50	Yes	Yes	Yes	Yes	Yes
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$\mathbb{R}^n$	52	Yes	Yes	Yes	Yes	Yes
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$\mathbb{R}^n$	55	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	56	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	57	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	58	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	59	Yes	Yes	Yes	Yes	Yes
$\mathbb{R}^n$	60	Yes	Yes	Yes		



Ser Pro Leu Thr Ile Gly Gln Asp Thr Gln Val Thr Arg Gln Ile Asp  
 545 550 555 560  
 Arg Cys Ile Glu Cys Gly Phe Cys Glu Val Asn Cys Leu Ser Cys Gly  
 565 570 575  
 Phe Thr Leu Ser Ser Arg Gln Arg Ile Val Ile Gln Arg Glu Ile Ser  
 580 585 590  
 Arg Leu Lys Lys Ser Gly Glu Asn Pro Gln Leu Leu Glu Thr Leu Ser  
 595 600 605  
 Glu Leu Tyr Arg Tyr Ser Gly Asn Trp Thr Cys Ala Gly Asp Gly Leu  
 610 615 620  
 Cys Ala Met Ser Cys Pro Met Gly Ile Asn Thr Gly Asp Leu Thr His  
 625 630 635 640  
 Ile Leu Arg Gln Ala Glu Phe Pro Pro Gly Ser Thr Gly Tyr Arg Ala  
 645 650 655  
 Gly Lys Phe Ala Ala Asn His Phe Ala Gly Ile Lys Ser Thr Leu Arg  
 660 665 670  
 Pro Val Leu Ser Leu Ala Asn Ala Ala His Ser Leu Leu Gly Thr Ser  
 675 680 685  
 Thr Met Thr Ser Ile Thr Arg Lys Met His Ser Ala Trp Gly Leu Pro  
 690 695 700  
 Gln Trp Thr Pro Ala Met Pro Lys Ser Tyr Lys Ile Arg Lys Ser Asp  
 705 710 715 720  
 Gln Thr Pro Ala Met Asn Asn Lys Val Val Tyr Phe Pro Ser Cys Ile  
 725 730 735  
 Asn Gln Thr Met Gly Leu Ala Lys Asp Ser Pro Val Asp Gln Pro Leu  
 740 745 750  
 Val Lys Gln Met Leu Ser Leu Leu Gln Lys Ala Gly Tyr Glu Val Ile  
 755 760 765  
 Phe Pro Pro Lys Met Glu Lys Leu Cys Cys Gly Thr Ile Trp Glu Ser  
 770 775 780  
 Lys Gly Met Leu Asp Ile Ala Asp Ser Lys Ser Thr Glu Leu Glu Ala  
 785 790 795 800  
 Ala Leu Trp Glu Ala Ser Glu Gln Gly Arg Tyr Pro Val Leu Cys Asp  
 805 810 815  
 Gln Ser Pro Cys Leu His Arg Met Arg Ala Thr Ile Gln Lys Ile Lys  
 820 825 830  
 Leu Tyr Glu Pro Ala Glu Phe Ile Tyr Thr Phe Leu Arg Asp Lys Leu  
 835 840 845  
 Glu Phe Thr Pro Thr Asp Arg Pro Ile Ala Ile His Ile Thr Cys Ser  
 850 855 860  
 Met Arg Lys Met Gly Leu Ala Asn Ile Leu Ile Ser Leu Ala Lys Leu  
 865 870 875 880  
 Cys Ser Thr Gln Val Phe Ile Pro Glu Glu Val Gly Cys Cys Gly Phe  
 885 890 895  
 Ala Gly Asp Lys Gly Phe Thr Gln Pro Glu Leu Asn Thr Tyr Ala Leu  
 900 905 910  
 Arg Lys Leu Arg Pro Gln Leu Thr Lys Ala Gly Ile Gly Ile Gly Tyr  
 915 920 925  
 Ser Asn Ser Arg Thr Cys Glu Ile Gly Leu Ala Thr Asn Thr Gly Ile  
 930 935 940  
 Pro Tyr Val Ser Ile Ala Tyr Leu Val Asp Gln Cys Thr Arg Pro Ile  
 945 950 955 960  
 Lys Gln Lys Asn Asn Leu Thr Leu Lys  
 965

&lt;210&gt; 8871

&lt;211&gt; 385

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8871

Ser Lys Ile Trp Phe Pro Phe Gln Leu Leu Ile Ser Phe Phe Lys Thr  
 1 5 10 15  
 Ile Phe Met Lys Lys Leu Asn Gln Leu Leu Leu Gly Leu Leu Leu Val  
 20 25 30  
 Gly Ser Ala Ile Ala Cys His Arg Glu Thr Ser Leu Glu Glu Arg Asp  
 35 40 45  
 Ile Val Ile Asp Leu Ser Val Ser Asn Pro Tyr Leu Pro Met Ser Val  
 50 55 60  
 Leu Val Asp Thr Ile Glu Ser Val Arg Leu Gln Leu Pro Ser Pro Tyr  
 65 70 75 80  
 Phe Trp Gly Met Val Asp Asn Val Ile Ser Lys Asp Ser Cys Tyr Tyr  
 85 90 95  
 Ile Ser Asp Arg Lys Gln Glu Met Ala Phe Arg Phe Ser Lys Asn Gly  
 100 105 110  
 Thr Phe Leu Asn Ala Ile Gly Gln Arg Gly Glu Gly Pro Gly Glu Tyr  
 115 120 125  
 Arg Glu Met Asp Ser Phe Phe Val Gly Lys Asp Cys Val Tyr Val Cys  
 130 135 140  
 Asp Met Gly Lys Arg Thr Ile Tyr Ser Tyr Ser Phe Asp Gly Lys Phe  
 145 150 155 160  
 Leu His Ser Leu Ser Phe Pro Tyr Ser Leu Val Phe Asn Asp Val Val  
 165 170 175  
 Glu Leu Pro Asp Gly Arg Phe Leu Cys His Arg Pro Ser Gln Ser Glu  
 180 185 190  
 Asn Cys Lys Gly Leu Trp Ile Leu Asp Gln Lys Gly Arg Arg Val Lys  
 195 200 205  
 Asn Leu Leu Glu Tyr Glu Lys Gly Thr Pro Cys Lys Asn Ser Tyr Trp  
 210 215 220  
 Asn Thr Leu Cys Ala Gln Glu Asp Gly Thr Ile Lys Ile Tyr Asn Pro  
 225 230 235 240  
 Val Asp Gly Ser Tyr Tyr Gln Tyr Asp Ala Val Asn Asp Thr Val Val  
 245 250 255  
 Arg Thr Met Arg Gln Lys Ser Asn Leu Pro Met Leu Ala Asp Phe His  
 260 265 270  
 Cys Ser Asp Arg Glu Leu Tyr Glu Thr Lys Glu Glu Cys Thr Tyr Ser  
 275 280 285  
 Leu Phe Thr Val Asp Gly Lys Asn Leu Val Phe Ser Leu Trp Ser Phe  
 290 295 300  
 Asn Ser Ala Asn Lys Gly Met Trp Ser Val Tyr Phe Lys Lys Asp Gly  
 305 310 315 320  
 Arg Ile Glu Gln Gly Asn Leu Thr Lys Met Asp Ile Pro Gly Tyr Ser  
 325 330 335  
 Glu Met Gly Arg Pro Val Ser Ser Asn Ile Pro Asn Thr Phe Val Thr  
 340 345 350  
 Val Tyr Thr Asp Glu Phe Pro Asp Asp Ala Phe Pro Ser Ala Tyr Gln  
 355 360 365  
 Gln Gln Glu Ile Asn Glu Gln Thr Ala Ile Leu Ser Leu Leu Arg Leu  
 370 375 380  
 Lys  
 385

&lt;210&gt; 8872

&lt;211&gt; 600

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8872

Leu Arg Gln Trp Asn Leu Gly Thr Ser Arg Pro Asp Val Ser Tyr Arg  
 1 5 10 15  
 Ile Val Arg Phe Thr Ser Tyr Phe Leu Ile Tyr His Lys Gln Leu Ile  
 20 25 30  
 Ala Asn Tyr Met Lys Lys Ile Lys Tyr Ile Ala Cys Leu Ser Leu  
 35 40 45  
 Ala Val Val Ser Gly Cys Asp Ser Ile Leu Asp Lys Gly Pro Leu Asp  
 50 55 60  
 Ser Phe Thr Asn Asp Asn Phe Trp Thr Gly Glu Gly Asn Ile Ser Gly  
 65 70 75 80  
 Tyr Ala Asn Ala Phe Tyr Glu Gln Phe Leu Gly Tyr Gly Asn Gly Asn  
 85 90 95  
 Gly Tyr Gly Asp Phe Tyr Phe Lys Thr Leu Ser Asp Asp Gln Ala Gly  
 100 105 110  
 Met Ser Phe Ala Lys Trp Thr Tyr Pro Asp Asn Ala Pro Ser Thr Ser  
 115 120 125  
 Ala Thr Trp Lys Asn Gly Trp Ile Glu Val Arg Arg Ala Asn Ile Met  
 130 135 140  
 Leu Glu Asn Val Pro Thr Val Ala Ser Leu Asp Glu Ala Thr Lys Asn  
 145 150 155 160  
 His Trp Leu Gly Val Ala Arg Leu Met Arg Ala Trp Gln Tyr Tyr His  
 165 170 175  
 Leu Val Arg Met Tyr Gly Asn Leu Pro Trp Ile Asp Lys Ala Leu Asn  
 180 185 190  
 Ile Asn Asp Glu Gly Glu Ile Tyr Gly Asn Arg Glu Asp Arg Asp Met  
 195 200 205  
 Val Met Asp Lys Val Leu Glu Asp Leu Asp Phe Ala Val Thr Asn Ile  
 210 215 220  
 Lys Asp Ile Ser Ser Lys Thr Thr Trp Ser Arg Ser Leu Ala Asn Ala  
 225 230 235 240  
 Met Lys Ala Glu Val Cys Leu Tyr Glu Gly Thr Phe Arg Lys Tyr Arg  
 245 250 255  
 Lys Asn Glu Asp Gly Gln Gln Ala Pro Asp Ala Thr Gly Ala Ala Arg  
 260 265 270  
 Tyr Leu Thr Ala Cys Lys Glu Ala Cys Leu Ala Val Met Ser Lys Gly  
 275 280 285  
 Tyr Lys Leu Asn Thr Ser Tyr Gln Gly Asn Tyr Asn Ser Thr Asp Leu  
 290 295 300  
 Ser Ser Asn Pro Glu Met Ile Leu Tyr Lys Ala Tyr Lys Glu Gly Leu  
 305 310 315 320  
 Leu Met His Ser Thr Ile Asp Tyr Thr Cys Ser Ser Thr Gln Ile Ser  
 325 330 335  
 Gly Met Ser Lys Asn Ala Phe Glu Ser Tyr Leu Phe Lys Asp Gly Lys  
 340 345 350  
 Pro Met Ala Leu Thr Ser Leu Asn Lys Ser Asp Glu Ala Pro Phe Gln  
 355 360 365  
 Tyr Gly His Leu Ser Leu Lys Ala Ile Leu Ala Val Arg Asp Lys Arg  
 370 375 380  
 Leu Ala Gln Thr Ile Asp Thr Val Leu Leu Tyr Asn Gly Arg Gly Phe  
 385 390 395 400  
 Thr Arg Phe Asn Thr Gly Met Glu Ser Thr Ser Ser Thr Gly Tyr Gly  
 405 410 415  
 Val Ala Lys Tyr Asp Asn Glu Ala Ile Pro Glu Gly Phe Arg Ser Gln  
 420 425 430  
 Ser Gly Lys Asn Tyr Thr His Ala Pro Leu Phe Trp Leu Ser Val Ile  
 435 440 445  
 Tyr Leu Asn Tyr Ala Glu Ala Cys Ala Glu Leu Gly Asn Ile Thr Gln  
 450 455 460  
 Asp Asp Leu Asp Lys Ser Ile Asn Leu Leu Lys Asp Arg Ala Gly Leu

465 470 475 480  
 Pro His Leu Asn Pro Ile Val Gly Phe Ser Asp Pro Ala Asn Asn His  
 485 490 495  
 Gly Val Ser Asp Leu Ile Trp Glu Ile Arg Arg Glu Arg Arg Cys Glu  
 500 505 510  
 Leu Met Phe Asp Asn Asp Asn Arg Tyr Trp Asp Leu Ile Arg Trp His  
 515 520 525  
 Gln Leu Asp Lys Leu Asp Thr Lys Tyr Pro Asp Ile Ile Leu Gly  
 530 535 540  
 Ala Asn Val Ala Asn Asp Met Asp Gly Cys Glu Ala Asn Lys Val Gly  
 545 550 555 560  
 Lys Tyr Ile Asp Gly Ser Lys Asp Gly Ser Arg Ile Tyr Asp Lys Lys  
 565 570 575  
 His Tyr Leu Tyr Pro Ile Pro Thr Gly Gln Ile Ala Leu Asn Pro Gln  
 580 585 590  
 Leu Ala Pro Asn Asn Pro Gly Trp  
 595 600

<210> 8873  
 <211> 341  
 <212> PRT  
 <213> B.fragilis

<400> 8873  
 Ile Ser Met Leu Asn Leu Ile Asn Ser Ile Val Ala Arg Ala Gln Ala  
 1 5 10 15  
 Asn Arg Gln Arg Ile Val Leu Pro Glu Gly Thr Glu Glu Arg Thr Leu  
 20 25 30  
 Lys Ala Ala Asn Gln Ile Leu Thr Asp Glu Val Ala Asp Leu Ile Leu  
 35 40 45  
 Leu Gly Asn Pro Glu Glu Ile Asn Ala Ala Ala Val Lys Trp Gly Leu  
 50 55 60  
 Gly Asn Ile Asn Arg Ala Thr Ile Ile Asp Pro Glu Asn His Pro Lys  
 65 70 75 80  
 Lys Glu Glu Tyr Ala Gln Leu Leu Cys Glu Leu Arg Lys Lys Lys Gly  
 85 90 95  
 Met Thr Ile Glu Ala Arg Lys Leu Val Leu Asp Pro Leu Tyr Leu  
 100 105 110  
 Gly Cys Leu Ile Ile Lys Ser Gly Asp Ala Asp Gly Gln Leu Ala Gly  
 115 120 125  
 Ala Arg Asn Thr Thr Gly Asp Val Leu Arg Pro Ala Leu Gln Ile Ile  
 130 135 140  
 Lys Thr Ser Pro Gly Ile Thr Cys Val Ser Gly Ala Met Leu Leu Leu  
 145 150 155 160  
 Thr His Ala Pro Glu Cys Gly Gln Asn Gly Leu Leu Val Met Gly Asp  
 165 170 175  
 Val Ala Val Thr Pro Val Pro Asp Ala Ser Gln Leu Ala Gln Ile Ala  
 180 185 190  
 Val Cys Thr Ala Arg Thr Ala Gln Ala Val Ala Gly Ile Ala Glu Pro  
 195 200 205  
 Lys Val Ala Met Leu Ser Phe Ser Thr Lys Gly Ser Ala Lys His Glu  
 210 215 220  
 Asn Val Asp Lys Val Val Glu Ala Leu Lys Leu Ala Lys Glu Met Ala  
 225 230 235 240  
 Pro Asp Leu Asn Ile Asp Gly Glu Met Gln Ala Asp Ala Ala Leu Val  
 245 250 255  
 Pro Ser Val Gly Ala Ser Lys Ala Pro Gly Ser Pro Val Ala Gly Glu  
 260 265 270  
 Ala Asn Val Leu Ile Val Pro Ser Leu Glu Val Gly Asn Ile Ser Tyr

275                      280                      285  
 Lys Leu Val Gln Arg Leu Gly His Ala Asp Ala Val Gly Pro Ile Leu  
     290                      295                      300  
 Gln Gly Ile Ala Arg Pro Val Asn Asp Leu Ser Arg Gly Cys Ser Ile  
 305                      310                      315                      320  
 Glu Asp Val Tyr Arg Met Ile Ala Ile Thr Ala Asn Gln Ala Ile Ala  
                     325                      330                      335  
 Ala Lys Asn Gly Lys  
                     340

<210> 8874  
 <211> 237  
 <212> PRT  
 <213> B.fragilis

<400> 8874  
 Ala Ile Cys Arg Arg Cys Leu Val Val Ile Trp Gln Ser Thr Leu Ser  
 1                      5                      10                      15  
 Lys Asp Cys Lys Ile Met Ile His Leu Glu Gly Ile Thr Lys Ser Phe  
                     20                      25                      30  
 Gly Ser Leu Gln Val Leu Lys Gly Ile Asp Leu Glu Ile Thr Gln Gly  
                     35                      40                      45  
 Glu Val Val Ser Ile Val Gly Pro Ser Gly Ala Gly Lys Thr Thr Leu  
                     50                      55                      60  
 Leu Gln Ile Met Gly Thr Leu Asp Ser Pro Asp Ala Gly Met Ile Asn  
 65                      70                      75                      80  
 Ile Asp Gly Thr Asn Val Ser Arg Met Lys Glu Lys Glu Leu Ser Ala  
                     85                      90                      95  
 Phe Arg Asn Lys His Ile Gly Phe Val Phe Gln Phe His Gln Leu Leu  
                     100                      105                      110  
 Pro Glu Phe Thr Ala Leu Glu Asn Val Met Ile Pro Ala Phe Ile Ala  
                     115                      120                      125  
 Gly Val Pro Thr Lys Glu Ala Ser Met Arg Ala Met Glu Ile Leu Asp  
                     130                      135                      140  
 Phe Met Gly Leu Lys Glu Arg Ala Ser His Lys Pro Asn Glu Leu Ser  
 145                      150                      155                      160  
 Gly Gly Glu Lys Gln Arg Val Ala Val Ala Arg Ala Leu Ile Asn Gln  
                     165                      170                      175  
 Pro Ala Val Ile Leu Ala Asp Glu Pro Ser Gly Ser Leu Asp Ser His  
                     180                      185                      190  
 Asn Lys Glu Glu Leu His Gln Leu Phe Phe Asp Leu Arg Asn Arg Phe  
                     195                      200                      205  
 Gly Gln Thr Phe Val Ile Val Thr His Asp Glu Ala Leu Ala Lys Ile  
                     210                      215                      220  
 Thr Asp Arg Thr Ile His Met Val Asp Gly Asn Ile Ile  
 225                      230                      235

<210> 8875  
 <211> 328  
 <212> PRT  
 <213> B.fragilis

<400> 8875  
 Gln Arg Phe Arg Met Lys Arg Asn Ile Ala Ile Val Ala Gly Gly Asp  
 1                      5                      10                      15  
 Thr Ser Glu Ile Val Val Ser Leu Arg Ser Ala Gln Gly Ile Tyr Ser  
                     20                      25                      30  
 Phe Ile Asp Lys Glu Lys Tyr Asn Leu Tyr Ile Val Glu Met Glu Gly  
                     35                      40                      45

Arg Arg Trp Glu Val Gln Leu Pro Asp Gly Ser Lys Thr Pro Val Asp  
 50 55 60  
 Arg Asn Asp Phe Ser Phe Met Asn Gly Ala Glu Lys Val Val Phe Asp  
 65 70 75 80  
 Phe Ala Tyr Ile Thr Ile His Gly Thr Pro Gly Glu Asp Gly Arg Leu  
 85 90 95  
 Gln Gly Tyr Phe Asp Met Met Arg Ile Pro Tyr Ser Cys Cys Gly Val  
 100 105 110  
 Leu Ala Ala Ala Ile Thr Tyr Asp Lys Phe Val Cys Asn Gln Tyr Leu  
 115 120 125  
 Lys Ala Phe Gly Val Arg Ile Ser Glu Ser Leu Leu Leu Arg Gln Gly  
 130 135 140  
 Gln Ala Val Ser Asp Glu Asp Val Val Glu Lys Ile Gly Leu Pro Cys  
 145 150 155 160  
 Phe Ile Lys Pro Asn Leu Gly Gly Ser Ser Phe Gly Val Thr Lys Val  
 165 170 175  
 Lys Thr Arg Glu Gln Ile Gln Pro Ala Ile Ala Lys Ala Phe Ser Glu  
 180 185 190  
 Ala Glu Glu Val Met Ile Glu Ala Phe Met Asp Gly Thr Glu Leu Thr  
 195 200 205  
 Cys Gly Cys Tyr Lys Thr Lys Glu Lys Ser Val Val Phe Pro Leu Thr  
 210 215 220  
 Glu Val Val Thr His Asn Glu Phe Phe Asp Tyr Asp Ala Lys Tyr Asn  
 225 230 235 240  
 Gly Gln Val Asp Glu Ile Thr Pro Ala Arg Ile Ser Glu Glu Leu Thr  
 245 250 255  
 Arg Arg Val Gln Thr Leu Thr Ser Ala Ile Tyr Asp Ile Leu Gly Cys  
 260 265 270  
 Ser Gly Ile Ile Arg Val Asp Tyr Ile Ile Thr Glu Gly Glu Lys Ile  
 275 280 285  
 Asn Leu Leu Glu Val Asn Thr Thr Pro Gly Met Thr Ala Thr Ser Phe  
 290 295 300  
 Ile Pro Gln Gln Val Arg Ala Ala Gly Leu Asp Ile Lys Asp Val Met  
 305 310 315 320  
 Thr Asp Ile Ile Glu Asn Lys Phe  
 325

&lt;210&gt; 8876

&lt;211&gt; 171

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8876

Asn Phe Asp Arg Met Glu Tyr Ile Asn Asp Leu Ile Arg Arg Lys Asp  
 1 5 10 15  
 Arg Leu Leu Ser Glu Asp Glu Ala Met Ser Leu Leu Glu Asn Gly Glu  
 20 25 30  
 Tyr Gly Val Leu Ser Ile Ser Ser Thr Glu Glu Gly Val Tyr Gly Ile  
 35 40 45  
 Pro Ile Asn Tyr Val Trp Asp Lys Gln Gln Ser Ile Tyr Phe His Cys  
 50 55 60  
 Ala Pro Glu Gly His Lys Leu Cys Ile Leu Gln Asn Cys Asn Gln Ala  
 65 70 75 80  
 Ser Phe Cys Val Val Gly Arg Thr Arg Val Val Ser Asn Gln Phe Ser  
 85 90 95  
 Thr Glu Tyr Glu Ser Ile Val Ile Asn Gly Thr Met Ile Cys Gln Leu  
 100 105 110  
 Glu Glu Thr Glu Lys Arg Lys Ala Leu Glu Leu Leu Leu Asp Lys Tyr  
 115 120 125

Ser	Pro	Glu	Asp	Lys	Lys	Val	Gly	Leu	Lys	Tyr	Ile	Glu	Lys	Ser	Phe
	130					135					140				
His	Arg	Thr	His	Val	Leu	Lys	Leu	Val	Ile	Lys	Val	Ile	Ser	Gly	Lys
145					150					155					160
Cys	Lys	Lys	Ile	Asn	Gln	Pro	Cys	Gln	Asp	Tyr					
				165					170						

&lt;210&gt; 8877

&lt;211&gt; 450

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8877

Val	Ile	Ser	Ser	Pro	Asn	Arg	Lys	Ile	Ser	Gln	His	Thr	Phe	Cys	Cys
1				5					10					15	
Leu	Cys	Ala	Glu	His	Ser	Asn	Gly	Ser	Phe	Val	Leu	His	Thr	Pro	Lys
		20					25					30			
Leu	Tyr	Asn	Thr	Tyr	Ile	Thr	Met	Arg	Ile	Gln	Thr	Gly	His	Gly	Thr
	35					40					45				
Ile	Pro	Leu	Ile	Thr	Leu	Ile	Gly	Ile	Trp	Ser	Ile	Ser	Ala	Leu	Asn
	50					55				60					
Ala	Leu	Pro	Gly	Leu	Ala	Val	Ser	Pro	Ile	Leu	Gly	Lys	Leu	Ser	Ala
65				70					75						80
Ile	Phe	Pro	His	Ser	Thr	Glu	Leu	Asp	Ile	Gln	Met	Leu	Ser	Ser	Leu
			85						90				95		
Pro	Ser	Leu	Leu	Ile	Ile	Pro	Phe	Ile	Leu	Leu	Ala	Gly	Lys	Leu	Thr
			100					105					110		
Glu	Arg	Val	Asn	Phe	Ile	Arg	Leu	Leu	Gln	Ala	Gly	Leu	Ala	Ile	Phe
		115					120					125			
Ala	Leu	Ser	Gly	Val	Leu	Tyr	Leu	Leu	Ser	Gly	Gln	Met	Trp	Gln	Leu
	130					135					140				
Ile	Ala	Val	Ser	Ala	Leu	Leu	Gly	Val	Gly	Ser	Gly	Leu	Ile	Val	Pro
145					150					155					160
Leu	Ser	Thr	Gly	Leu	Ile	Ser	Lys	Tyr	Phe	Val	Gly	Ser	Tyr	Arg	Val
			165					170						175	
Lys	Gln	Phe	Gly	Leu	Ser	Ser	Ala	Ile	Thr	Asn	Ile	Thr	Leu	Val	Val
		180						185					190		
Ala	Thr	Ala	Val	Thr	Gly	Tyr	Leu	Ala	Glu	Val	Asn	Trp	His	Leu	Pro
		195					200					205			
Phe	Val	Val	Tyr	Leu	Leu	Pro	Ile	Ile	Ser	Leu	Val	Leu	Ser	Val	Tyr
	210					215					220				
Leu	Gln	Arg	Ser	Met	Ala	Ser	Glu	Gly	Ser	Thr	Ser	Leu	Thr	Asn	Asp
225					230					235					240
Lys	Ala	Pro	Ala	Asp	Lys	Glu	Glu	Asp	Val	Asp	Thr	Gly	Asn	Ser	Lys
			245						250					255	
Tyr	Gly	Ile	His	Val	Arg	His	Leu	Ala	Gly	Ile	Met	Gly	Val	Tyr	Gly
		260						265					270		
Leu	Ala	Thr	Phe	Leu	Val	Leu	Val	Val	Ser	Phe	Asn	Leu	Pro	Phe	Leu
		275					280					285			
Met	Glu	Glu	Tyr	His	Phe	Thr	Ser	Gly	Asn	Ser	Gly	Ile	Met	Ile	Ser
	290					295					300				
Leu	Phe	Phe	Leu	Ala	Ile	Met	Thr	Pro	Gly	Phe	Phe	Leu	Asn	Arg	Ile
305					310					315					320
Val	Gly	Thr	Leu	Lys	Glu	Lys	Thr	Lys	Phe	Tyr	Ser	Phe	Leu	Ser	Ile
			325						330					335	
Gly	Ile	Gly	Leu	Ala	Leu	Ile	Trp	Ile	Ser	Pro	Lys	Glu	Trp	Val	Ile
		340					345						350		
Ala	Pro	Gly	Cys	Ile	Leu	Val	Gly	Leu	Gly	Tyr	Gly	Val	Ile	Gln	Pro
		355					360						365		

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Val Val Tyr Asn Gln Thr Thr His Thr Ala Ile Ser Arg Lys Val Thr  
 370 375 380  
 Leu Ala Leu Ala Phe Val Met Ala Met Asn Tyr Leu Ala Ile Leu Leu  
 385 390 395 400  
 Cys Pro Phe Ile Ile Asp Phe Phe Gln Ser Thr Val Phe His Ile Lys  
 405 410 415  
 Ser Gln Gln Phe Ala Phe Val Phe Asn Leu Cys Ile Ser Ile Val Met  
 420 425 430  
 Leu Val Ile Ser Tyr Thr Lys Arg Asn Ser Phe Leu Phe Asn Asp Asn  
 435 440 445  
 Leu Lys  
 450

<210> 8878  
 <211> 486  
 <212> PRT  
 <213> B.fragilis

<400> 8878  
 Leu Lys Ile Arg Val Ile Met Glu Asp Leu Asn Phe Arg Lys Gly Asp  
 1 5 10 15  
 Ala Lys Thr Glu Ala Phe Gly Ser Asn Arg Met Leu Gln Pro Ser Pro  
 20 25 30  
 Val Glu Lys Ile Pro Asp Gly Pro Thr Thr Pro Glu Ile Ala Tyr Gln  
 35 40 45  
 Met Val Lys Asp Glu Thr Phe Ala Gln Thr Gln Pro Arg Leu Asn Leu  
 50 55 60  
 Ala Thr Phe Val Thr Thr Tyr Met Asp Asp Tyr Ala Thr Lys Leu Met  
 65 70 75 80  
 Asn Glu Ala Ile Asn Ile Asn Tyr Ile Asp Glu Thr Glu Tyr Pro Arg  
 85 90 95  
 Ile Ala Val Met Asn Gly Lys Cys Ile Asn Ile Val Ala Asn Leu Trp  
 100 105 110  
 Asn Ser Pro Glu Lys Asp Thr Trp Lys Thr Gly Ala Leu Ala Ile Gly  
 115 120 125  
 Ser Ser Glu Ala Cys Met Leu Gly Gly Val Ala Ala Trp Leu Arg Trp  
 130 135 140  
 Arg Lys Lys Arg Gln Ala Gln Gly Lys Pro Phe Asp Lys Pro Asn Phe  
 145 150 155 160  
 Val Ile Ser Thr Gly Phe Gln Val Val Trp Glu Lys Phe Ala Gln Leu  
 165 170 175  
 Trp Gln Ile Glu Met Arg Gln Val Pro Leu Thr Leu Asp Lys Thr Thr  
 180 185 190  
 Leu Asp Pro Glu Glu Ala Leu Lys Met Cys Asp Glu Asn Thr Ile Cys  
 195 200 205  
 Val Val Pro Ile Gln Gly Val Thr Trp Thr Gly Leu Asn Asp Asp Val  
 210 215 220  
 Glu Ala Leu Asp Lys Ala Leu Asp Ala Tyr Asn Ala Lys Thr Gly Tyr  
 225 230 235 240  
 Asp Ile Pro Ile His Val Asp Ala Ala Ser Gly Gly Phe Ile Leu Pro  
 245 250 255  
 Phe Leu Tyr Pro Asp Thr Lys Trp Asp Phe Arg Leu Lys Trp Val Leu  
 260 265 270  
 Ser Ile Ser Val Ser Gly His Lys Phe Gly Leu Val Tyr Pro Gly Leu  
 275 280 285  
 Gly Trp Val Val Trp Lys Gly Lys Glu Tyr Leu Pro Glu Glu Met Ala  
 290 295 300  
 Phe Ser Val Asn Tyr Leu Gly Ala Asn Ile Thr Gln Val Gly Leu Asn  
 305 310 315 320



Phe Ser Arg Pro Ala Ala Gln Ile Leu Gly Gln Tyr Tyr Gln Phe Ile  
 325 330 335  
 Arg Leu Gly Phe Gln Gly Tyr Lys Glu Val Gln Tyr Asn Ser Leu Gln  
 340 345 350  
 Ile Ala Lys Tyr Ile His Ser Gln Ile Ala Lys Met Thr Pro Phe Val  
 355 360 365  
 Asn Tyr Ser Glu Asp Val Val Asn Pro Leu Phe Ile Trp Tyr Met Lys  
 370 375 380  
 Pro Glu Tyr Ala Lys Asn Ala Lys Trp Thr Leu Tyr Asp Leu Gln Asp  
 385 390 395 400  
 Lys Leu Ala Gln His Gly Trp Met Val Pro Ala Tyr Thr Leu Pro Ala  
 405 410 415  
 Lys Leu Gln Asp Tyr Val Val Met Arg Val Val Val Arg Gln Gly Phe  
 420 425 430  
 Ser Arg Asp Met Ala Asp Met Leu Leu Gly Asp Ile Lys Asn Ala Ile  
 435 440 445  
 Ala Glu Leu Glu Lys Leu Glu Tyr Pro Thr Ser Thr Arg Ile Ala Gln  
 450 455 460  
 Glu Lys Asn Leu Pro Val Glu Ala Lys Val Phe Asn His Thr Gly Lys  
 465 470 475 480  
 Pro Gln Ala Ala Lys Lys  
 485

<210> 8879  
 <211> 192  
 <212> PRT  
 <213> B.fragilis

<400> 8879  
 Arg Ile Ser Ser Met Ile Asn Ala Gln Asp Ile Lys Asn Gly Thr Cys  
 1 5 10 15  
 Ile Arg Met Asp Gly Lys Leu Tyr Phe Cys Ile Glu Leu Val His Val  
 20 25 30  
 Lys Pro Gly Lys Gly Asn Thr Phe Met Arg Thr Lys Leu Lys Asp Val  
 35 40 45  
 Val Ser Gly Tyr Val Leu Glu Arg Arg Phe Asn Ile Gly Glu Lys Leu  
 50 55 60  
 Glu Asp Val Arg Val Glu Arg Arg Pro Tyr Gln Tyr Leu Tyr Lys Glu  
 65 70 75 80  
 Gly Glu Asp Tyr Ile Phe Met Asn Gln Glu Thr Phe Asp Gln His Pro  
 85 90 95  
 Ile Ala His Asp Leu Ile Asn Gly Val Asp Phe Leu Leu Glu Gly Ala  
 100 105 110  
 Val Val Glu Val Val Ser Asp Ala Ser Thr Glu Thr Val Leu Tyr Ala  
 115 120 125  
 Asp Met Pro Ile Lys Val Gln Met Lys Val Thr Tyr Thr Glu Pro Gly  
 130 135 140  
 Leu Lys Gly Asp Thr Ala Thr Asn Thr Leu Lys Pro Ala Thr Val Glu  
 145 150 155 160  
 Ser Gly Ala Thr Val Arg Val Pro Leu Phe Ile Ser Glu Gly Glu Thr  
 165 170 175  
 Ile Glu Ile Asp Thr Arg Asp Gly Ser Tyr Val Gly Arg Val Lys Ala  
 180 185 190

<210> 8880  
 <211> 470  
 <212> PRT  
 <213> B.fragilis

&lt;400&gt; 8880

Asn	Ser	Thr	Arg	Met	Lys	Arg	Leu	Phe	Tyr	Phe	Phe	Leu	Phe	Val	Cys
1				5					10					15	
Val	Ala	Val	Ile	Ala	Asn	Ala	Gln	Ala	Lys	Tyr	Val	Phe	Tyr	Phe	Ile
			20					25					30		
Gly	Asp	Gly	Met	Gly	Val	Asn	Gln	Val	Asn	Gly	Thr	Glu	Met	Tyr	Arg
			35				40						45		
Ala	Glu	Ile	Gln	Lys	Gly	Arg	Ile	Gly	Val	Glu	Pro	Leu	Leu	Phe	Thr
			50				55					60			
Gln	Phe	Pro	Val	Gly	Thr	Met	Ala	Thr	Thr	Phe	Ser	Ala	Thr	Asn	Ser
65						70					75				80
Val	Thr	Asp	Ser	Ser	Ala	Ala	Gly	Thr	Ala	Leu	Ser	Thr	Gly	Glu	Lys
				85					90					95	
Thr	Tyr	Asn	Gly	Ser	Ile	Gly	Met	Asp	Asp	Gln	Lys	Asn	Pro	Leu	Gln
			100					105					110		
Thr	Val	Ala	Glu	Lys	Ala	Lys	Lys	Ala	Gly	Lys	Arg	Val	Gly	Val	Thr
			115					120					125		
Thr	Ser	Val	Ser	Val	Asp	His	Ala	Thr	Pro	Ala	Ala	Phe	Tyr	Ala	His
			130				135					140			
Gln	Pro	Asp	Arg	Asn	Met	Tyr	Tyr	Glu	Ile	Ala	Thr	Asp	Leu	Pro	Lys
145					150					155					160
Ala	Gly	Phe	Asp	Phe	Tyr	Ala	Gly	Ala	Gly	Phe	Leu	Lys	Pro	Thr	Thr
				165					170					175	
Thr	Tyr	Asp	Lys	Lys	Glu	Ala	Pro	Ser	Ile	Phe	Pro	Met	Phe	Glu	Glu
			180					185					190		
Ala	Gly	Tyr	Thr	Ile	Ala	Arg	Gly	Tyr	Asn	Asp	Tyr	Lys	Ala	Lys	Ala
			195					200					205		
Ala	Ala	Ala	Gly	Lys	Met	Ile	Leu	Ile	Gln	Glu	Glu	Gly	Ala	Asp	Thr
			210				215					220			
Gly	Ser	Leu	Pro	Tyr	Ala	Ile	Asp	Ser	Lys	Glu	Gly	Asp	Leu	Thr	Leu
225					230					235					240
Ala	Gln	Ile	Thr	Glu	Ser	Ala	Ile	Asp	Phe	Leu	Thr	Lys	Gly	Lys	Asn
				245					250					255	
Lys	Gly	Phe	Phe	Leu	Met	Val	Glu	Gly	Gly	Lys	Ile	Asp	Trp	Ala	Cys
			260					265					270		
His	Gly	Asn	Asp	Ala	Ala	Thr	Val	Phe	His	Glu	Val	Ala	Asp	Met	Asp
			275					280					285		
Asn	Ala	Ile	Lys	Val	Ala	Tyr	Glu	Phe	Tyr	Lys	Lys	His	Pro	Lys	Glu
			290				295					300			
Thr	Leu	Ile	Val	Val	Thr	Ala	Asp	His	Glu	Thr	Gly	Gly	Ile	Ala	Leu
305					310					315					320
Gly	Thr	Gly	Lys	Tyr	Ala	Leu	Asn	Leu	Lys	Ala	Leu	Glu	Asn	Gln	Lys
			325						330					335	
Ala	Ser	Ala	Glu	Val	Leu	Ser	Lys	Lys	Ile	Ser	Asp	Leu	Arg	Lys	Ala
			340					345					350		
Lys	Asn	Asn	His	Val	Ala	Trp	Glu	Asp	Ile	Lys	Asn	Leu	Leu	Ser	Glu
			355					360					365		
Glu	Met	Gly	Phe	Trp	Ser	Val	Leu	Pro	Ile	Thr	Trp	Glu	Gln	Glu	Lys
			370				375					380			
Lys	Leu	Arg	Asp	Glu	Tyr	Glu	Lys	Ser	Phe	Val	Arg	Asn	Lys	Val	Glu
385					390					395					400
Phe	Ala	Glu	Ser	Met	Tyr	Ala	Lys	Thr	Glu	Pro	Met	Ala	Ala	Lys	Ala
				405					410					415	
Lys	Glu	Val	Met	Asp	Gln	Ile	Ala	Met	Val	Gly	Trp	Thr	Ser	Gly	Gly
			420					425					430		
His	Ser	Ala	Gly	Tyr	Val	Pro	Val	Phe	Ala	Ile	Gly	Ala	Gly	Ser	Asp
			435				440					445			
Leu	Phe	Ile	Gly	Lys	Met	Asp	Asn	Thr	Glu	Ile	Pro	Lys	Arg	Ile	Ala
			450				455					460			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

Lys Ala Gly Gly Tyr Lys  
465 470

<210> 8881

<211> 376

<212> PRT

<213> B.fragilis

<400> 8881

Gln	Lys	Arg	Arg	Gln	Leu	Cys	Lys	Leu	Leu	Val	Ile	Arg	Glu	Gln	Asn
1				5					10					15	
Ala	Leu	Leu	Phe	Leu	Ile	Lys	Asn	Ile	Ile	Phe	Val	Asn	Glu	Leu	Gln
			20					25					30		
Thr	Tyr	Pro	Ile	Met	Lys	Gln	Thr	Ala	Tyr	Ile	Tyr	Leu	Leu	Thr	Leu
		35					40					45			
Ser	Cys	Leu	Leu	Cys	Ala	Cys	Asn	Arg	Glu	Asn	Arg	Thr	Asn	Leu	Pro
	50					55					60				
Gln	Pro	Gln	Val	Thr	Gly	Val	Ala	Asp	Ser	Leu	Glu	Thr	Val	Pro	Pro
65					70					75				80	
Glu	Glu	Lys	Pro	Lys	Ala	Ile	Ser	Ala	Glu	Gln	Ile	Glu	Ile	Lys	Lys
				85					90					95	
Asp	Leu	Leu	Tyr	Asp	Lys	Tyr	Thr	Leu	Glu	Asp	Thr	Tyr	Pro	Tyr	Lys
			100					105					110		
Asp	Thr	Thr	Arg	Ser	Phe	Gln	Trp	Asp	Lys	Ile	Lys	Glu	Arg	Leu	Ala
		115					120					125			
Leu	Leu	Glu	Asn	Ile	Gln	Gln	Thr	Pro	Ser	Gln	Trp	Gly	Ile	Leu	Gln
	130					135					140				
Asn	Tyr	Lys	Asn	Arg	Asn	Gly	Glu	Ala	Pro	Leu	Val	Arg	His	Tyr	Lys
145					150					155				160	
Arg	Asn	Ala	Tyr	Lys	Arg	Ile	Ala	Asp	Thr	Leu	Gly	Ile	Glu	Arg	Tyr
				165					170					175	
Gln	Ser	Val	Pro	Leu	Tyr	Leu	Leu	Thr	Asp	Thr	Leu	Val	Pro	Glu	Arg
			180					185					190		
Tyr	Gly	Glu	Asp	Gly	Ser	Leu	Val	Arg	Phe	Leu	Ala	Asp	Gly	Glu	Asn
		195					200					205			
Phe	Val	Lys	Val	Ser	Pro	Ile	Tyr	Ile	Gly	Glu	Glu	Trp	Tyr	Val	Pro
	210					215					220				
Lys	Arg	Tyr	Val	Lys	Val	Leu	Pro	Asp	Thr	Thr	His	Phe	Ile	Lys	Thr
225					230					235				240	
Ile	Met	Ile	Asp	Arg	Arg	Asp	Gln	Asn	Ile	Met	Thr	Leu	Glu	Gln	Thr
			245						250					255	
Gly	Glu	Ala	Gln	Trp	Thr	Val	Arg	Ser	Met	Asn	Pro	Ala	Thr	Thr	Gly
			260					265					270		
Arg	His	Arg	Pro	Ser	Tyr	Ala	Gln	Glu	Thr	Pro	Leu	Gly	Ile	Phe	Val
		275					280					285			
Leu	Gln	Glu	Lys	Lys	Thr	Arg	Met	Ile	Phe	Leu	Lys	Asp	Gly	Ser	Thr
	290					295					300				
Ala	Thr	Gly	Arg	Phe	Ala	Pro	Tyr	Ala	Asn	Arg	Phe	Ser	Asp	Gly	Gly
305					310					315				320	
Tyr	Ile	His	Gly	Val	Pro	Val	Asn	Glu	Pro	Arg	Lys	Ala	Leu	Ile	Glu
			325						330					335	
Tyr	Ser	Pro	Ser	Leu	Gly	Thr	Thr	Pro	Arg	Ser	His	Met	Cys	Val	Arg
		340						345					350		
Asn	Ala	Thr	Ser	His	Ser	Lys	Phe	Ile	Phe	Asp	Trp	Ala	Pro	Val	Asn
		355					360					365			
Glu	Thr	Ile	Ile	Phe	Val	Leu	Glu								
	370					375									

<210> 8882

<211> 413  
 <212> PRT  
 <213> B.fragilis

<400> 8882

Lys	Cys	Asn	Gly	Asn	Ser	Glu	Lys	Pro	Arg	Lys	Gly	Lys	Arg	Ile	Asn
1				5					10					15	
Ser	Pro	Arg	Ser	Pro	Leu	Cys	His	Thr	Asp	Ile	Leu	Phe	Gln	Asp	Ile
			20					25					30		
Arg	Met	Gly	Glu	Val	Thr	Tyr	Arg	Gln	Lys	Ser	Ile	Tyr	Leu	Cys	Phe
		35					40					45			
Gln	Ile	Val	Ser	Ile	Met	Lys	Lys	Glu	Phe	Thr	Arg	Ile	Ala	Ile	Lys
	50					55					60				
Val	Gly	Ser	Asn	Val	Leu	Thr	Arg	Gln	Asp	Gly	Thr	Leu	Asp	Val	Thr
65					70					75				80	
Arg	Met	Ser	Ala	Leu	Thr	Asp	Gln	Ile	Ala	Ala	Leu	His	Lys	Ala	Gly
			85						90					95	
Val	Glu	Val	Ile	Leu	Ile	Ser	Ser	Gly	Ala	Val	Ala	Ser	Gly	Arg	Ser
			100					105					110		
Glu	Ile	Arg	Thr	Leu	Arg	Lys	Leu	Asp	Ser	Val	Asp	Gln	Arg	Gln	Leu
		115					120					125			
Phe	Ser	Ala	Val	Gly	Gln	Ala	Lys	Leu	Ile	Asn	Arg	Tyr	Tyr	Glu	Leu
	130					135					140				
Phe	Arg	Asp	His	Gly	Ile	Ala	Val	Gly	Gln	Val	Leu	Thr	Thr	Lys	Glu
145					150					155					160
Asn	Phe	Gly	Thr	Arg	Arg	His	Tyr	Leu	Asn	Gln	Lys	Asn	Cys	Met	Thr
				165					170					175	
Val	Met	Leu	Glu	Asn	Gly	Val	Ile	Pro	Ile	Val	Asn	Glu	Asn	Asp	Thr
			180					185					190		
Ile	Ser	Val	Thr	Glu	Leu	Met	Phe	Thr	Asp	Asn	Asp	Glu	Leu	Ser	Gly
		195					200					205			
Leu	Ile	Ala	Ser	Met	Met	Asn	Ala	Gln	Ala	Leu	Ile	Ile	Leu	Ser	Asn
	210					215					220				
Ile	Asp	Gly	Ile	Tyr	Asn	Gly	Ser	Pro	Ser	Asp	Pro	Asp	Ser	Leu	Val
225					230					235					240
Ile	Arg	Glu	Ile	Gly	Gln	Gly	Lys	Asp	Leu	Ser	Asn	Tyr	Ile	Gln	Thr
				245					250					255	
Ser	Lys	Ser	Ser	Phe	Gly	Arg	Gly	Gly	Met	Leu	Thr	Lys	Thr	Asn	Ile
			260					265					270		
Ala	Arg	Lys	Val	Ala	Asp	Glu	Gly	Ile	Thr	Val	Ile	Ile	Ala	Asn	Gly
		275					280					285			
Lys	Arg	Asp	Asn	Ile	Leu	Ile	Asn	Leu	Ile	Glu	His	Pro	Glu	Glu	Thr
	290					295					300				
Val	Cys	Thr	Arg	Phe	Ile	Pro	Ala	Ser	Gln	Pro	Val	Ser	Ser	Ile	Lys
305					310					315					320
Lys	Trp	Ile	Ala	His	Ser	Glu	Gly	Phe	Ala	Lys	Gly	Glu	Ile	His	Ile
				325					330					335	
Asn	Glu	Gln	Ala	Thr	Glu	Val	Leu	Asn	Ser	Asp	Lys	Ala	Val	Ser	Ile
			340					345					350		
Leu	Pro	Val	Gly	Ile	Thr	Arg	Ile	Glu	Gly	Glu	Phe	Glu	Lys	Asp	Asp
		355					360					365			
Ile	Val	Arg	Ile	Ile	Asp	Tyr	Arg	Gly	Thr	Pro	Val	Gly	Val	Gly	Lys
	370					375					380				
Val	Asn	Cys	Asp	Ser	Met	Gln	Ala	Arg	Asp	Ser	Ile	Gly	Lys	His	Gly
385					390					395					400
Lys	Lys	Ala	Val	Val	His	Tyr	Asp	Tyr	Leu	Tyr	Ile	Glu			
				405					410						

<210> 8883

<211> 175  
 <212> PRT  
 <213> B.fragilis

<400> 8883

Thr	Asn	Leu	Gly	Val	Gln	Phe	Phe	Asn	Lys	Thr	Thr	Lys	Arg	Arg	Tyr
1				5					10					15	
Arg	Ala	Leu	Val	Trp	Gly	Ile	Val	Asp	Gln	Asp	Glu	Arg	Thr	Ile	Val
		20						25					30		
Gly	Ser	Ile	Ala	Arg	Asn	Pro	Lys	Asp	Arg	Met	Gln	Met	Ala	Val	Met
		35					40				45				
Ala	Asp	Pro	Thr	Gln	Gly	Lys	His	Ala	Val	Thr	His	Tyr	Arg	Val	Leu
	50					55					60				
Glu	Arg	Val	Gly	Tyr	Val	Thr	Leu	Val	Glu	Cys	Ile	Leu	Glu	Thr	Gly
65					70					75				80	
Arg	Thr	His	Gln	Ile	Arg	Val	His	Met	Lys	His	Ile	Gly	His	Val	Leu
			85					90						95	
Phe	Asn	Asp	Glu	Arg	Tyr	Gly	Gly	His	Glu	Ile	Leu	Lys	Gly	Thr	His
			100					105					110		
Phe	Ser	Lys	Tyr	Lys	Gln	Phe	Val	Asn	Asn	Cys	Phe	Asp	Thr	Cys	Pro
		115					120					125			
Arg	Gln	Ala	Leu	His	Ala	Met	Thr	Leu	Gly	Phe	Val	His	Pro	Val	Thr
	130					135					140				
Gly	Glu	Glu	Met	His	Phe	Thr	Ser	Glu	Leu	Pro	Asp	Asp	Met	Thr	Arg
145					150					155					160
Leu	Ile	Glu	Lys	Trp	Arg	Gly	Tyr	Ile	Ser	Asn	Arg	Asp	Leu	Glu	
			165						170					175	

<210> 8884  
 <211> 297  
 <212> PRT  
 <213> B.fragilis

<400> 8884

Arg	Ile	Met	Gly	Arg	Pro	Ile	Lys	Ile	Ile	Gly	Tyr	Leu	Cys	Phe	Leu
1				5					10					15	
Met	Ala	Leu	Cys	Ser	Cys	Lys	Glu	Thr	Lys	Glu	Gln	Gln	Ile	Ser	Arg
		20						25					30		
Leu	Ile	His	Lys	Trp	Glu	Gly	Arg	Thr	Ile	Val	Tyr	Pro	Ala	Asp	Met
		35					40				45				
Thr	Phe	Ser	Val	Leu	Gly	Lys	Asp	Ser	Ala	Gly	Tyr	Ser	Phe	Pro	Gln
	50					55					60				
Asn	Glu	Tyr	Thr	Ile	Met	Thr	Tyr	Val	Asp	Ser	Val	Gly	Cys	Thr	Ser
65					70					75				80	
Cys	Lys	Leu	Gln	Leu	Pro	Thr	Trp	Lys	Tyr	Phe	Ile	Ser	Met	Val	Asp
			85						90					95	
Thr	Met	Ala	Asn	Gly	Lys	Val	Ser	Phe	Leu	Phe	Ala	Phe	His	Pro	Lys
			100					105					110		
Asn	Lys	Lys	Glu	Ile	Ser	Phe	Leu	Leu	Lys	Arg	Asp	Arg	Phe	Leu	Tyr
		115					120					125			
Pro	Val	Phe	Ile	Asp	Glu	Lys	Gly	Gly	Phe	Asp	Ala	Leu	Asn	His	Phe
	130					135					140				
Pro	Ser	Asp	Val	Asn	Phe	Gln	Thr	Phe	Leu	Leu	Asp	Ser	Gln	Asn	Lys
145					150					155					160
Val	Ile	Ala	Ile	Gly	Asn	Pro	Val	His	Asn	Lys	Lys	Val	Arg	Asp	Leu
			165						170					175	
Tyr	Leu	Gln	Ile	Ile	Thr	Gly	Arg	Gln	Thr	Gly	Val	Ala	Thr	Ser	Ser
			180					185					190		
Gln	Thr	Lys	Val	Val	Leu	Asp	Lys	Lys	Leu	Asp	Glu	Met	Gly	Asp	Phe

195	200	205
Asp Trp Lys Ile Pro Gln Thr	Ala Thr Phe Ser Leu Arg Asn Leu Gly	
210	215	220
Asp His Leu Leu Ile Ile Glu Asp Ile Asn Ala Ser Cys Gly Cys Thr		
225	230	235
Ser Val Thr Tyr Ser Lys Glu Pro Val Pro Ser Gly Lys Ser Ala Asp		
	245	250
Ile Gln Val Thr Tyr Arg Ala Glu His Pro Glu His Phe Glu Lys Thr		
	260	265
Ile Thr Val Tyr Cys Asn Thr Pro Thr Ser Pro Ile Arg Leu Lys Ile		
	275	280
Arg Gly Asn Ala Ile Asp Glu Glu Tyr		285
290	295	

<210> 8885  
 <211> 114  
 <212> PRT  
 <213> B.fragilis

<400> 8885
Leu Cys Leu Met Asn Phe Gln Arg Asn Thr Asp Met Thr Lys Phe Glu
1 5 10 15
Ile Glu Glu Lys Ile Val Asp Met Leu Lys Thr Val Phe Asp Pro Glu
20 25 30
Ile Pro Val Asn Val Tyr Asp Leu Gly Leu Ile Tyr Lys Ile Asp Val
35 40 45
Ser Glu Asp Gly Glu Val Ser Ile Asp Met Thr Leu Thr Ala Pro Asn
50 55 60
Cys Pro Ala Ala Asp Phe Ile Met Glu Asp Val Arg Gln Lys Val Glu
65 70 75 80
Ser Ile Asp Gly Val Asn Ser Ala Thr Ile Asn Leu Val Phe Glu Pro
85 90 95
Glu Trp Asp Lys Asp Met Met Ser Glu Glu Ala Lys Leu Glu Leu Gly
100 105 110
Phe Leu

<210> 8886  
 <211> 521  
 <212> PRT  
 <213> B.fragilis

<400> 8886
Ser Leu Ile Met Met Lys Thr Lys His Tyr Phe Ser Phe Val Phe Ala
1 5 10 15
Ser Leu Phe Leu Ile Pro Ser Val Ile Thr Ala Gln Asp Val Asn Tyr
20 25 30
Gln Lys Glu Phe Asp Thr Phe Gln Glu Lys Gln Gln Lys Glu Tyr Lys
35 40 45
Glu Phe Lys Asn Lys Ala Asp Glu Glu Phe Ala Thr Phe Leu Lys Glu
50 55 60
Ala Trp Gln Lys Tyr Asn Ala Ser Met Gly Asp Ser Met Pro Thr Arg
65 70 75 80
Pro Glu Pro Val Lys Pro Thr Leu Phe Asp Lys Lys Lys Pro Val Pro
85 90 95
Ala Pro Val Glu Ile Lys Pro Ala Val Pro Lys Ile Pro Ile Ala Asp
100 105 110
Lys Pro Gly Val Gly Gly Lys Val Asn Val Glu Val Lys Lys Pro Glu
115 120 125

Leu Pro Ala Val Ala Asp Lys Pro Ala Pro Gly Val Tyr Val Pro Gly  
 130 135 140  
 Lys Pro Tyr Thr Pro Val Lys Val Asp Ile Pro Ala Pro Leu Pro Gly  
 145 150 155 160  
 Ser Ser Ala His Arg Asn Ala Ile Glu Phe Tyr Gly Thr Arg Phe Glu  
 165 170 175  
 Val Ala Thr Asp Val Ile Asp Gly Phe Glu Leu Gly Gly Thr Ser Glu  
 180 185 190  
 Ser Lys Val Ala Gly Ala Trp Ser Arg Leu Cys Lys Ala Asp His Glu  
 195 200 205  
 Gln Leu Ile Asn Asp Cys Ile Arg Leu Lys Lys Glu His Gln Met Asn  
 210 215 220  
 Asp Trp Ala Phe Leu Met Phe Ile Lys Gln Leu Gly Val Gln Met Cys  
 225 230 235 240  
 Gly Val Ala Lys Lys Asp Asp Val Ala Phe Leu Gln Met Phe Ile Leu  
 245 250 255  
 Asn Lys Cys Gly Tyr Lys Val Arg Leu Ser Lys Ile Asn Asp Lys Leu  
 260 265 270  
 Lys Leu Leu Val Ala Pro Ala Gly Thr Ile Phe Gly Ile Pro Tyr Ile  
 275 280 285  
 Thr Phe Lys Gly Val Lys Tyr Tyr Val Phe Glu Ala Asp Lys Gly Gly  
 290 295 300  
 Ser Met Ala Val Tyr Thr Tyr Ser Gln Asp Phe Ala Asn Ala Lys Asn  
 305 310 315 320  
 Leu Val Cys Met Asp Leu Ser Ala Val Pro Gln Phe Gly Met Gln Glu  
 325 330 335  
 Phe Ser Lys Thr Val Ser Pro Ser Glu Lys Ser Leu Leu Lys Val Asn  
 340 345 350  
 Thr Ala Val Asn Lys Asn Leu Met Asp Phe Tyr Lys Asp Tyr Pro Gln  
 355 360 365  
 Cys Glu Val Ala Val Tyr Tyr Lys Thr Pro Met Ser Lys Glu Leu Lys  
 370 375 380  
 Ser Ala Leu Tyr Pro Pro Leu Gln Ala Ala Ile Lys Gly Lys Ser Glu  
 385 390 395 400  
 Lys Asp Ala Ala Asn Ile Leu Ile Asp Phe Val Gln Asn Ser Phe Gln  
 405 410 415  
 Tyr Gln Thr Asp Gly Glu Gln Phe Gly Tyr Glu Lys Pro Phe Met  
 420 425 430  
 Asp Glu Asn Phe Tyr Tyr Pro Ala Cys Asp Cys Glu Asp Arg Ala Ile  
 435 440 445  
 Leu Phe Ser Asn Leu Val Lys Asp Leu Leu Gly Leu Asp Ala Val Leu  
 450 455 460  
 Leu Asp Tyr Pro Asn His Ile Ala Ser Ala Val Arg Phe Asn Glu Asp  
 465 470 475 480  
 Ile Ser Gly Asp Tyr Ile Leu Leu Asp Gly Lys Lys Tyr Leu Ile Cys  
 485 490 495  
 Asp Pro Thr Tyr Ile Gly Ala Pro Ile Gly Met Cys Met Asp Arg Phe  
 500 505 510  
 Lys Ser Val Pro Pro Glu Ile Ile Arg  
 515 520

&lt;210&gt; 8887

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8887

Lys Cys Ile Met Lys Val Lys Leu Leu Phe Val Ile Cys Leu Ser Val  
 1 5 10 15

Phe Ser Leu Cys Gly Ile Tyr His Val Gln Ala Asn Lys Glu Asp Lys  
                   20                  25                  30  
 Asn Val Ser Thr Leu Val Leu Gln Asn Ile Glu Ser Leu Ala Gln Asn  
                   35                  40                  45  
 Glu Gly Asn Ser Asp His Gly Asn Ile Asp Thr Thr Leu Glu Pro Tyr  
                   50                  55                  60  
 Tyr Tyr Gln Ser Ser Arg Asp Tyr Trp Leu Pro Gly Met Asn Gly Thr  
 65                  70                  75                  80  
 Thr Glu Ile Pro Cys Cys Glu Lys Cys Glu Ser Lys Tyr Ser Gly Cys  
                   85                  90                  95  
 Ala Lys Gly Leu Ala Arg Cys  
                   100

<210> 8888

<211> 424

<212> PRT

<213> B.fragilis

<400> 8888

Asn Arg Val Met Arg Ile Thr Asn Leu Phe Trp Thr Val Val Leu Leu  
 1                  5                  10                  15  
 Ala Pro Leu Ser Val Phe Ala Gln Gln Lys Glu Asn Leu Phe Thr  
                   20                  25                  30  
 Ile Asp Ala Gln Ile Arg Thr Arg Gly Glu Tyr Arg Asn Gly Val Leu  
                   35                  40                  45  
 Asn Pro Arg Pro Glu Gly Glu Glu Pro Thr Phe Phe Val Asn Glu Arg  
                   50                  55                  60  
 Ala Arg Leu Ser Leu Gly Tyr Gln Arg Asp Arg Leu Gln Met Arg Leu  
 65                  70                  75                  80  
 Ser Ala Gln His Val Gly Val Trp Gly Gln Asp Pro Gln Ile Asp Lys  
                   85                  90                  95  
 Asn Gly Arg Phe Ile Leu His Glu Ala Trp Ala Arg Leu Asp Phe Ser  
                   100                  105                  110  
 Lys Gly Leu Phe Ala Gln Leu Gly Arg Gln Pro Leu Ser Tyr Asp Asp  
                   115                  120                  125  
 Glu Arg Leu Leu Gly Gly Leu Asp Trp Asn Val Ala Gly Arg Phe His  
                   130                  135                  140  
 Asp Ala Leu Lys Leu Gly Tyr Glu Ser Lys Leu His Lys Leu His Leu  
 145                  150                  155                  160  
 Ile Leu Ala Phe Asn Gln Asn Asp Glu Asn Arg Ser Tyr Gly Gly Thr  
                   165                  170                  175  
 Tyr Tyr Ala Pro Gly Ala Gln Pro Tyr Lys Thr Met Gln Thr Val Trp  
                   180                  185                  190  
 Tyr Asn Gly His Trp Ala Lys Asp Phe Thr Val Ser Leu Leu Phe Met  
                   195                  200                  205  
 Asn Thr Gly Phe Glu Thr Gly Thr Glu Gly Asn Gly Lys Thr Ala Asn  
                   210                  215                  220  
 Met Gln Thr Met Gly Thr Tyr Leu Val Tyr Thr Pro Gly Ala Trp Leu  
 225                  230                  235                  240  
 Phe Asn Gly Ser Ala Tyr Tyr Gln Phe Gly Lys Asn Lys Ala Asp Lys  
                   245                  250                  255  
 Lys Val Ser Ala Tyr Met Phe Ser Leu Lys Ala Gly Tyr Lys Ile Asp  
                   260                  265                  270  
 Pro Lys Trp Ser Val Ser Leu Gly Thr Asp Tyr Leu Ser Gly Asp Pro  
                   275                  280                  285  
 Asp Ser Lys Lys Val Ser Thr Phe Asp Pro Leu Tyr Gly Thr His His  
                   290                  295                  300  
 Lys Phe Tyr Gly Gly Met Asp Tyr Phe Tyr Ala Ser Ala Tyr Asn Lys  
 305                  310                  315                  320



Gly Leu Trp Asp Lys Ile Leu Ser Val Asp Phe Lys Pro Thr Lys Lys  
                           325                          330                          335  
 Leu Ser Phe Ser Leu Asn Tyr His His Phe Ser Thr Thr Tyr Asp Val  
                           340                          345                          350  
 Met Ala Thr Asp Gly Lys Glu Gly Arg Cys Leu Gly Ser Glu Leu Asp  
                           355                          360                          365  
 Met Gln Val Asp Tyr Ile Leu Met Lys Asp Val Lys Leu Thr Ala Gly  
                           370                          375                          380  
 Tyr Ser Thr Met Leu Gly Thr Lys Tyr Met Asp Ile Val Lys Gly Gly  
 385                          390                          395                          400  
 Asn His Lys Ser Trp Gln Asp Trp Gly Trp Leu Thr Leu Asn Ile Asn  
                           405                          410                          415  
 Pro Arg Ile Leu Phe Thr Lys Trp  
                           420

&lt;210&gt; 8889

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8889

Thr His Tyr Ile Pro Thr Ile Met Lys Glu Asp Lys Asp Thr Arg Val  
 1                          5                          10                          15  
 Val Glu Val Phe Thr Gly Ser Pro Trp Glu Ala Glu Phe Ile Lys Gly  
                           20                          25                          30  
 Leu Leu Glu Ser Asn Gly Ile Glu Ser Ile Leu Lys Asp Gly Gly Gly  
                           35                          40                          45  
 Leu Ala Ala Leu Ala Pro Tyr Tyr Ile Gly Gln Glu Ile Ala Val Leu  
                           50                          55                          60  
 Val Asn Glu Asp Asp Tyr Glu Asn Ala Met Glu Ile Val Arg Asn Arg  
 65                          70                          75                          80  
 Glu Lys Ala Asn Glu  
                           85

&lt;210&gt; 8890

&lt;211&gt; 376

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8890

Ile Lys Asn Met His Ile Ile Lys Val Ile Phe Ser Leu Ala Leu Ile  
 1                          5                          10                          15  
 Leu Asn Ile Cys Val Ser Cys His Glu Asn Asp Asp Thr Ala Tyr Phe  
                           20                          25                          30  
 Asn Gly Lys Ile Gln Thr Ile Glu Asp Ser Ile Lys Asp Thr Lys Lys  
                           35                          40                          45  
 Ala Thr Leu Lys Ile Leu Pro Leu Asp Gly Ala Asn Phe Gly Trp Leu  
                           50                          55                          60  
 Ser Thr Tyr Asp Ser Leu Met Phe Phe Met Asn Pro Lys Leu Pro Asp  
 65                          70                          75                          80  
 Arg Phe Tyr Asn Ile Phe Asn Ile Asp Thr Gly Lys Glu Ile Gly Thr  
                           85                          90                          95  
 Phe Cys Tyr Arg Gly Ser Gly Pro Gly Glu Val Ala Ala Leu Gly Pro  
                           100                          105                          110  
 Ile Phe His Phe Phe Lys Glu Lys Gly Asp Leu Lys Thr Leu Leu Phe  
                           115                          120                          125  
 Ala Pro Asn Glu Glu Lys Leu Phe Ile Trp Asn Ile Thr Gln Ser Ile  
                           130                          135                          140  
 Lys Arg Asp Thr Thr Val Met Asp Lys Gln Ile Ser Tyr Pro Trp Arg

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145 150 155 160  
 Glu Glu Asn Gly Gly Ala Pro Tyr Tyr Leu Met Phe Leu Lys Asp Glu  
 165 170 175  
 Asn Thr Leu Ile Thr Glu Leu Gln Ser Phe Pro Leu Asn Asp Lys Glu  
 180 185 190  
 Ala Thr Leu Pro Ala Tyr Gln Lys Arg Thr Leu Asp Thr Asn Lys Leu  
 195 200 205  
 Leu Lys Ser Phe Ser Ser Tyr Lys Lys Ser Ile Arg Asn Asp Glu Ala  
 210 215 220  
 Ser Ile Leu Pro Glu Ser Phe Phe Tyr Ser Asn Asp Ala Ile Lys Pro  
 225 230 235 240  
 Asp Gly Thr Lys Val Val Gln Ala Met Val His Leu Ala Gln Leu Asn  
 245 250 255  
 Ile Leu Asp Leu Glu Thr Gly His Val Ser Gly Tyr Arg Leu Glu Gly  
 260 265 270  
 Glu Pro Asp Phe Ser Val Phe Lys Ser Asp Glu Lys Ile Lys Ser Tyr  
 275 280 285  
 Phe Thr Arg Val Gln Ala Asp Asp Asn Tyr Ile Tyr Ala Val Tyr Trp  
 290 295 300  
 Gly Lys Glu Arg Trp Glu Arg Phe Glu Thr Pro His Met Asn Ile Ile  
 305 310 315 320  
 His Val Tyr Asp Trp Asp Gly Asn Leu Val Gln Lys Ile Glu Thr Asp  
 325 330 335  
 Tyr Ser Ile Gly Gln Met Trp Ile Asp Pro Ile Arg Asn Arg Leu Tyr  
 340 345 350  
 Val Thr Asn Pro Gln Ile Asp Asp Val Leu Tyr Leu Asp Leu Asp Asp  
 355 360 365  
 Phe Leu Val Pro Asn Thr Gly Leu  
 370 375

<210> 8891  
 <211> 285  
 <212> PRT  
 <213> B.fragilis

<400> 8891  
 Glu Lys Asn Ile Tyr Lys Asn Met Ile Leu Ile Ala Asp Ser Gly Ser  
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 Thr Lys Thr Asp Trp Cys Val Val Glu His Gly Gln Leu Ile Gln Gln  
 20 25 30  
 Ile Phe Thr Lys Gly Thr Asn Pro Phe Phe Gln Ser Glu Glu Glu Ile  
 35 40 45  
 Ser Asn Glu Ile Ala Thr Ala Leu Ile Pro Gln Leu Lys Thr Asn Lys  
 50 55 60  
 Phe Glu Ala Val His Phe Tyr Gly Ala Gly Cys Ala Phe Pro Asp Lys  
 65 70 75 80  
 Ile Glu Thr Met Arg Lys Ala Ile Ala Ser His Leu Gln Val Ser Gly  
 85 90 95  
 Glu Ile Glu Val Ser Thr Asp Met Leu Ala Ala Ala Arg Ser Leu Cys  
 100 105 110  
 Gly His Gln Pro Gly Ile Ala Cys Ile Met Gly Thr Gly Ser Asn Ser  
 115 120 125  
 Cys Tyr Tyr Asp Gly Lys Asn Ile Val Thr Asn Val Ser Pro Leu Gly  
 130 135 140  
 Phe Ile Leu Gly Asp Glu Gly Ser Gly Ala Val Leu Gly Lys Leu Leu  
 145 150 155 160  
 Val Gly Asp Ile Leu Lys Asn Gln Met Thr Pro Gly Leu Lys Glu Lys  
 165 170 175  
 Phe Leu Glu Gln Phe Asn Leu Thr Pro Ala Glu Ile Ile Asp Arg Val

		180				185			190						
Tyr	Arg	Lys	Pro	Phe	Pro	Asn	Arg	Phe	Leu	Ala	Ser	Phe	Ser	Pro	Phe
		195					200					205			
Leu	Val	Gln	His	Leu	Asp	Glu	Pro	Val	Ile	Arg	Glu	Leu	Val	Leu	Asn
		210				215					220				
Ser	Phe	Lys	Lys	Phe	Leu	Lys	Arg	Asn	Val	Met	Gln	Tyr	Asp	Tyr	Gln
225					230					235					240
His	Ala	Pro	Val	His	Phe	Ile	Gly	Ser	Val	Ala	Phe	Tyr	Tyr	Arg	Glu
				245					250					255	
Leu	Leu	Ser	Glu	Ala	Cys	Lys	Ile	Met	Gly	Val	His	Leu	Gly	Thr	Ile
			260					265					270		
Ile	Gln	Ser	Pro	Met	Glu	Gly	Leu	Ile	Lys	Phe	His	Glu			
		275					280					285			

&lt;210&gt; 8892

&lt;211&gt; 599

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8892

Ile	Val	Asp	Ile	Phe	His	Ser	Ile	Lys	Ile	Leu	Lys	Val	Ile	Ser	Ile
1			5						10					15	
Ile	Ile	Phe	Thr	Lys	Phe	Val	Thr	Phe	Thr	Phe	Arg	Ile	Ser	Lys	Asn
			20					25					30		
Ile	Lys	Met	Arg	Gln	Tyr	Leu	Leu	Asn	Ile	Ile	Leu	Leu	Phe	Leu	Gly
		35					40					45			
Phe	Thr	Ile	Ile	Tyr	Ser	Cys	Ser	Arg	His	Gln	Gln	Ile	Asn	Arg	Thr
		50				55					60				
Ile	Phe	Leu	Ala	Asp	Ser	Ile	Met	Glu	Tyr	Gln	Pro	Asp	Ser	Ala	Phe
65					70					75					80
Lys	Leu	Leu	Lys	Thr	Ile	Asn	Gln	Thr	Asp	Leu	Ser	Val	Ser	Glu	Asn
				85				90						95	
Ala	Lys	Tyr	Ala	Leu	Leu	Leu	Ala	Gln	Ala	Gln	Asp	Lys	Ala	Gly	His
			100					105					110		
Gln	Leu	Ile	Asn	Asp	Ser	Leu	Ile	Leu	Ile	Ala	Ile	Asn	His	Tyr	Asp
		115					120						125		
His	Leu	Ser	Lys	Asp	Asn	Asn	Lys	Ala	Lys	Ala	Tyr	Phe	Tyr	Leu	Gly
		130				135					140				
Arg	Phe	Tyr	Gln	Asn	Asn	Asn	Asp	Tyr	Ala	Lys	Ala	Ile	Asn	Ser	Tyr
145					150					155					160
Leu	Ile	Ala	Glu	Lys	Ala	Thr	Ser	Asp	His	Asp	Thr	Leu	Leu	Thr	Leu
				165						170				175	
Ile	Tyr	Asp	Asn	Leu	Gly	Thr	Cys	Tyr	Lys	Asn	Gln	Asp	Phe	Tyr	Asp
			180					185					190		
Lys	Ala	Leu	Glu	Val	Tyr	Lys	Asp	Ala	Tyr	Tyr	Ile	Tyr	Lys	Gln	Tyr
		195					200						205		
Asn	Ser	Lys	Asn	Ile	Leu	Tyr	Pro	Leu	Arg	Gly	Met	Ala	Ser	Ile	Tyr
		210				215					220				
Ala	Ile	Gln	Glu	Gln	Phe	Glu	Lys	Ala	Leu	Lys	Tyr	Tyr	Gln	Thr	Ala
225					230					235					240
Leu	Thr	Ile	Ala	Ser	Ser	Thr	Asn	Asp	Ser	Thr	Trp	Gln	Ser	Ile	Leu
				245					250					255	
Phe	Cys	Asp	Ile	Ser	Arg	Ile	Tyr	Asp	Asn	Lys	Asn	Leu	Tyr	Glu	Ala
		260						265					270		
Ala	Tyr	Ser	Tyr	Ile	Val	Arg	Ser	Ile	Gln	Tyr	Ala	Pro	Arg	Ser	Ser
		275					280						285		
Asp	Leu	Ser	Ala	Met	Tyr	Phe	Trp	Lys	Gly	Glu	Ile	Leu	His	Asn	Leu
		290				295					300				
Asn	Gln	Leu	Asp	Ser	Ala	Phe	Tyr	Tyr	Ile	Asn	Leu	Ala	Lys	Lys	Ser

305                      310                      315                      320  
 Ser Asp Leu Asn Thr Gln Ala Ser Ala Tyr Gln Ala Leu Tyr Glu Ile  
                                  325                      330                      335  
 Lys Lys Glu Gln Gly Glu Leu Asn Asp Ala Ile Leu Tyr Asn Asp Thr  
                                  340                      345                      350  
 Ser Leu Ile Leu Tyr Asp Ser Ile Gln Asp Leu Asn His Ser Ala Glu  
                                  355                      360                      365  
 Ile Ser His Ile Leu Lys Gln His Ala Thr Glu Thr Leu Gln Gln Ala  
                                  370                      375                      380  
 Glu Val Ile Lys Arg Gln Lys His Thr Ala Phe Leu Ile Val Thr Thr  
 385                      390                      395                      400  
 Leu Leu Leu Ile Ala Cys Ile Thr Phe Ile Phe Leu Tyr Lys Asp Asn  
                                  405                      410                      415  
 Lys Arg Lys Lys Val Tyr Ile Lys Ile Gln Cys Glu Leu Arg Asn Asn  
                                  420                      425                      430  
 Gln Ile Glu Lys Asp Glu Leu Lys Glu Lys Ile Lys Thr Leu Ile Asp  
                                  435                      440                      445  
 Ser Asn Thr Tyr Ile Ala Glu Arg Asn Lys Glu Leu Lys Lys Glu Glu  
                                  450                      455                      460  
 Leu Lys Gln Gln Gln Ile Glu Leu Trp Lys Arg Thr Leu Gln Ile Cys  
 465                      470                      475                      480  
 Thr Arg Leu Phe His Thr Ser Thr Ser Tyr Lys Lys Leu His Ala Ile  
                                  485                      490                      495  
 Glu Thr Ala Lys Phe Lys Lys Glu Arg Glu Glu Lys Gln Lys Glu Ile  
                                  500                      505                      510  
 Asn Ser Ile Gln Lys Glu Ile Asn Glu Val Phe Ile Glu Ala Ile Gln  
                                  515                      520                      525  
 Glu Leu Arg Glu Gln Tyr Pro Lys Leu Thr Gln Glu Asp Leu Phe Tyr  
                                  530                      535                      540  
 Cys Ile Leu Gln Tyr Leu Arg Leu Ser Thr Ser Thr Ile Lys Phe Cys  
 545                      550                      555                      560  
 Met Arg Val Glu Ser Asn Gln Ala Leu Thr Gln Arg Lys Tyr Arg Ile  
                                  565                      570                      575  
 Lys Lys Gln Ile Ser Pro Gln Thr Phe Ser Ile Ile Phe Asn Glu Ser  
                                  580                      585                      590  
 Ser Pro Ser Glu Gly Val Leu  
                                  595

&lt;210&gt; 8893

&lt;211&gt; 437

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8893

Thr His Thr Ile Ile Met Lys Asn Lys Asn Ile Ser Pro Trp Ala Trp  
 1                      5                      10                      15  
 Ile Pro Thr Leu Tyr Phe Ala Gln Gly Leu Pro Tyr Val Ala Val Met  
                                  20                      25                      30  
 Thr Ile Ser Val Ile Met Tyr Lys Asn Leu Gly Ile Ser Asn Thr Asp  
                                  35                      40                      45  
 Ile Ala Leu Tyr Thr Ser Trp Leu Tyr Leu Pro Trp Val Ile Lys Pro  
                                  50                      55                      60  
 Phe Trp Ser Pro Phe Val Asp Leu Leu Lys Thr Lys Arg Trp Trp Ile  
 65                      70                      75                      80  
 Val Ser Met Gln Leu Val Gly Ala Gly Leu Ala Gly Ile Ala Phe  
                                  85                      90                      95  
 Thr Ile Pro Met Ser Asn Phe Phe Gln Thr Thr Leu Ala Ile Phe Trp  
                                  100                      105                      110  
 Leu Val Ala Phe Ser Ser Ala Thr His Asp Ile Ala Ala Asp Gly Phe

115	120	125
Tyr Met Leu Ala Leu Asn Val	Gln Asp Gln Ala Leu Tyr Val Gly Ile	
130	135	140
Arg Ser Thr Phe Tyr Arg Ile	Ala Thr Ile Ala Gly Gln Gly Leu Leu	
145	150	155
Val Met Leu Ala Gly Gly Leu Glu Ile	Trp Thr Gly Ser Ile Lys Tyr	160
	165	170
Gly Trp Ser Ile Thr Phe Phe Ile	Leu Ala Gly Leu Phe Leu Ala Phe	175
	180	185
Cys Leu Tyr His Lys Cys Ile	Leu Pro Lys Pro Asn Ser Asp Lys Ala	190
	195	200
Val Val Gly Glu Asn Ser Ala	Ser Ala Ile Phe Ser Gly Phe Ile Glu	205
	210	215
Thr Phe Ala Ser Phe Phe Arg	Lys Lys Gln Ala Gly Val Ala Ile Leu	220
225	230	235
Phe Met Leu Phe Tyr Arg Phe	Pro Glu Ala Gln Leu Val Lys Leu Ile	240
	245	250
Asn Pro Phe Leu Leu Asp Pro	Ile Asp Lys Gly Gly Leu Gly Leu Thr	255
	260	265
Thr Ala Glu Val Gly Leu Val	Tyr Gly Thr Ile Gly Ile Ile Gly Leu	270
	275	280
Thr Leu Gly Gly Ile Ile Gly	Gly Ile Cys Ala Ala Lys Gly Gly Leu	285
290	295	300
Gln Lys Trp Leu Trp Pro Met	Ala Trp Ser Leu Ser Leu Thr Cys Leu	305
	310	315
Thr Phe Val Tyr Leu Gly Tyr	Phe Gln Pro Gln Asn Phe Val Ile Ile	320
	325	330
Asn Leu Cys Val Phe Ile Glu	Gln Phe Gly Tyr Gly Phe Gly Phe Thr	335
	340	345
Ala Tyr Met Leu Tyr Leu Ile	Tyr Tyr Ser Asp Gly Glu His Lys Thr	350
	355	360
Ala His Tyr Ala Ile Cys Thr	Ala Phe Met Ala Leu Gly Met Met Leu	365
370	375	380
Pro Gly Met Ala Ala Gly Trp	Leu Gln Glu Leu Ile Gly Tyr Glu Asn	385
	390	395
Phe Phe Ile Trp Val Met Val	Cys Cys Thr Ala Thr Ile Ala Val Cys	400
	405	410
Ala Phe Ile Lys Ile Asp Pro	Asn Tyr Gly Lys Lys Ala Glu Gly Ile	415
	420	425
Pro Gln Lys Thr Lys		430
435		

<210> 8894  
 <211> 419  
 <212> PRT  
 <213> B.fragilis

<400> 8894

Thr Asn Cys Ile Met Asn Leu	Asn Asp Thr Phe Ala Ala Val Gln Ala
1	5 10 15
Ala Gly Arg His Leu Ala Leu	Leu Pro Asp Asp Arg Ile Asn Gln Ile
	20 25 30
Leu Asn Ala Val Ala Glu Ala	Ala Leu Glu Gln Thr Ser Tyr Ile Leu
	35 40 45
Ser Glu Asn Arg Lys Asp Leu	Glu Arg Met Ser Pro Asp Asn Pro Lys
	50 55 60
Tyr Asp Arg Leu Arg Leu Thr	Glu Glu Arg Leu Arg Gly Ile Ala Ser
65	70 75 80
Asp Ile Arg Asn Val Ala Thr	Leu Pro Ser Pro Leu Gly Arg Ile Leu

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 8895

Lys	Lys	Arg	Met	Ile	Glu	Glu	Leu	Pro	Asp	Asp	Ile	Glu	Gln	Asp	Glu
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Leu	Asp	Asp	Ile	Glu	Pro	Val	Gly	Asp	Glu	Asn	Gln	Leu	Tyr	Glu	His
			20					25					30		
Phe	Arg	Val	Val	Val	Asp	Lys	Gly	Gln	Ala	Met	Val	Arg	Val	Asp	Lys
		35					40					45			
Tyr	Leu	Phe	Glu	Arg	Ile	Val	Asn	Ala	Ser	Arg	Asn	Arg	Ile	Gln	Lys
	50					55					60				
Ala	Ala	Glu	Asp	Gly	Phe	Val	Met	Ala	Asn	Gly	Lys	Pro	Val	Lys	Ser

65                      70                      75                      80  
 Ser Tyr Lys Val Lys Pro Leu Asp Val Ile Thr Val Met Met Asp Arg  
                                  85                      90                      95  
 Pro Arg Tyr Asp Asn Glu Ile Ile Pro Glu Asp Ile Pro Leu His Ile  
                                  100                      105                      110  
 Val Tyr Glu Asp Lys Tyr Leu Met Val Val Asn Lys Pro Ala Gly Leu  
                                  115                      120                      125  
 Val Val His Thr Gly His Gly Asn Tyr His Gly Thr Leu Val Asn Ala  
                                  130                      135                      140  
 Ile Ala Trp His Leu Lys Asp Asn Pro Asp Tyr Asp Ala Asn Asp Pro  
 145                      150                      155                      160  
 His Val Gly Leu Val His Arg Ile Asp Lys Asp Thr Ser Gly Leu Leu  
                                  165                      170                      175  
 Val Ile Ala Lys Thr Pro Asp Ala  
                                  180

<210> 8896  
 <211> 202  
 <212> PRT  
 <213> B.fragilis

<400> 8896  
 Ile His Ser Ile Ile His Thr Met Lys Val Lys Glu Tyr Ile Gln Trp  
 1                      5                      10                      15  
 Leu Leu Pro Ser Arg Lys Trp Arg Val Leu Ala Ile Ile Ile Thr Gly  
                                  20                      25                      30  
 Val Ile Val Gly Gly Gly Ala Leu Phe Leu Tyr Met Leu Arg Ala His  
                                  35                      40                      45  
 Thr Tyr Leu Ala Asp Asp Pro Ser Ala Cys Val Asn Cys His Ile Met  
                                  50                      55                      60  
 Gly Pro Tyr Tyr Ala Thr Trp Phe His Ser Ser His Ser Arg Asn Ala  
 65                      70                      75                      80  
 Thr Cys Asn Asp Cys His Val Pro His Glu Asn Pro Val Lys Lys Trp  
                                  85                      90                      95  
 Val Phe Lys Gly Met Asp Gly Met Arg His Val Ala Val Phe Leu Thr  
                                  100                      105                      110  
 Arg Gly Glu Lys Asp Val Leu Arg Ala Asn Lys Glu Ser Ala Glu Val  
                                  115                      120                      125  
 Ile Met Asn Asn Cys Ile Arg Cys His Thr Gln Leu Asn Thr Glu Phe  
                                  130                      135                      140  
 Val Asn Thr Gly Arg Ile Asp Tyr Met Met Ser Gln Val Gly Glu Gly  
 145                      150                      155                      160  
 Lys Ala Cys Trp Asp Cys His Arg Asp Val Pro His Gly Gly Ser Asn  
                                  165                      170                      175  
 Ser Ala Ala Ser Thr Pro Asp Ala Leu Val Pro Tyr Pro Asp Ser Pro  
                                  180                      185                      190  
 Thr Pro Glu Trp Leu Arg Lys Met Ile Glu  
                                  195                      200

<210> 8897  
 <211> 642  
 <212> PRT  
 <213> B.fragilis

<400> 8897  
 Ala Phe Val Leu Thr Met Lys Tyr Val Leu Phe Ile Leu Leu Val Leu  
 1                      5                      10                      15  
 Thr Leu Ala Ala Cys Gln Ser Glu Lys Asp Arg Arg Leu Glu Tyr Ala  
                                  20                      25                      30

Leu Glu Phe Ala Gly Asp Asn Arg Val Glu Leu Glu Lys Val Leu Glu  
 35 40 45  
 His Tyr Arg Thr Asp Pro Glu Lys Leu Glu Ala Ala Arg Phe Leu Ile  
 50 55 60  
 Arg Asn Met Pro Gly Trp Tyr Ser Tyr Glu Gly Asn Glu Leu Asp Ser  
 65 70 75 80  
 Ile His His Leu Leu Val Gly Val Cys Glu Gly Arg Ser Ile Ser Lys  
 85 90 95  
 Arg Glu Lys Asn Lys Trp Asn Arg Ile Ser Phe Asn Ser Leu Ser Lys  
 100 105 110  
 Ile Tyr Asp Ala Gln Val Ile Thr Ala Glu Tyr Leu Ile Asp Asn Ile  
 115 120 125  
 Asp Leu Ala Phe Glu Val Trp Arg Lys Tyr Pro Trp Asn Arg Asn Leu  
 130 135 140  
 Pro Phe Asp Asp Phe Cys Glu Leu Ile Leu Pro Tyr Arg Ile Ala Asp  
 145 150 155 160  
 Glu Pro Leu Ser Asp Trp Arg Lys Leu Tyr Tyr Glu Asp Tyr Gly Thr  
 165 170 175  
 Leu Leu Asp Ser Leu Tyr Lys Gly Ser Asp Val Ile Glu Ala Ser Lys  
 180 185 190  
 Ile Ile Asp Gly Lys Leu Arg Lys Leu Tyr Tyr Ile Tyr Asn Thr Asp  
 195 200 205  
 Phe Arg Val Pro His Leu Asn Ala Val Phe Leu Tyr His Asn Arg Ile  
 210 215 220  
 Gly Tyr Cys Arg Glu Ala Cys Asp Leu Thr Ile Tyr Ala Met Arg Ala  
 225 230 235 240  
 Cys Gly Ile Pro Val Ala Thr Asp Tyr Phe Val Tyr Ser Pro Asp Tyr  
 245 250 255  
 Gln His Tyr His Cys Trp Thr Met Leu Arg Asp Thr Thr Gly Thr Phe  
 260 265 270  
 Leu Gln Phe Gly Phe Asn Glu Phe Glu Ala Ser Arg Asp Thr Leu Arg  
 275 280 285  
 His Asp Gly Arg Lys Lys Gly Lys Val Tyr Arg Tyr Cys Phe Gly Met  
 290 295 300  
 Gln Ala Asp Lys Asn Ser Gly Thr Ser Gly Asn Arg Gln Leu Ser Pro  
 305 310 315 320  
 Val Leu Lys Asn Arg Phe Val Lys Asp Val Thr Ser Glu Tyr Phe Gly  
 325 330 335  
 Ser Asn Asp Thr Thr Ile Pro Ile Gln Met Ser Gly Glu Gln Tyr Ile  
 340 345 350  
 Tyr Leu Gly Ile Phe Ser Pro Gly Gly Trp Ile Pro Ile Asp Met Ala  
 355 360 365  
 Leu Gly Asn Ala Gly Lys Val Thr Phe Arg Asp Ile Glu Pro Asp Val  
 370 375 380  
 Ile Tyr Gln Thr Leu Tyr Gln Gly Asp Gly Gly Lys Leu Tyr Pro Ala  
 385 390 395 400  
 Gly Tyr Pro Phe Ile Ser Lys Thr Gly Gly Gly Phe Val Leu Leu Lys  
 405 410 415  
 Pro Asn Ile Asp Leu Met Glu Glu Ala Ile Leu Lys Arg Lys Met Pro  
 420 425 430  
 Gln Gln Lys Thr Ile Ala Glu Trp Ala Tyr Arg Ala Ile Ile Gly Ala  
 435 440 445  
 Lys Val Glu Ala Ala Asp Asp Leu Ser Phe Met Gln Ala Asp Leu Leu  
 450 455 460  
 Trp Gln Phe Glu Asp Thr Leu Thr Thr Asn Tyr Cys Val Leu Thr Pro  
 465 470 475 480  
 Leu Leu Arg Lys Lys Tyr Arg Tyr Val Arg Tyr Val Ala Pro Ile Gly  
 485 490 495  
 Lys Arg Met Glu Leu Ala Glu Leu Ala Leu Phe Lys Asp Ser Leu Cys



	500		505		510										
Lys	Glu	Lys	Val	Arg	Leu	Gly	Arg	Ile	Asn	Ser	Ile	Glu	Pro	Ile	Ala
	515		520		525										
Lys	Leu	Glu	Tyr	Val	Thr	Asp	Gly	Asn	Ile	Leu	Thr	Tyr	Phe	Gln	Ala
	530		535		540										
Arg	Asp	Thr	Ser	Cys	Tyr	Leu	Ala	Tyr	Asp	Leu	Gly	Glu	Ser	Thr	Leu
	545		550		555										
Ile	Glu	Arg	Ile	Val	Phe	Ser	Pro	Arg	Asn	Asp	Asp	Asn	Tyr	Ile	Trp
	565		570		575										
Pro	Gly	Asp	Asn	Tyr	Glu	Leu	Phe	Tyr	Gln	Asp	Gly	Ile	Asn	Gly	Trp
	580		585		590										
Lys	Ser	Leu	Gly	Ser	Lys	Val	Ala	Thr	Glu	Arg	Glu	Ile	Asp	Phe	Leu
	595		600		605										
Val	Pro	Gln	Asn	Ala	Leu	Leu	Trp	Leu	Arg	Asn	Arg	Thr	Lys	Gly	Arg
	610		615		620										
Glu	Glu	Gln	Val	Phe	Ile	Tyr	Lys	Asn	Gly	Arg	Gln	Tyr	Phe	Ala	Phe
	625		630		635										
Asp	Leu														

&lt;210&gt; 8898

&lt;211&gt; 217

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8898

Gln	Leu	Ile	Ile	Met	Thr	Ile	Lys	Glu	Phe	Phe	Ser	Phe	Lys	Ala	Asn
1				5					10					15	
Arg	Phe	Phe	Trp	Ile	Asn	Ile	Ile	Ala	Met	Val	Val	Val	Ala	Val	Leu
			20					25					30		
Ile	Val	Val	Gly	Thr	Leu	Lys	Gly	Leu	Asp	Ile	Tyr	Thr	Arg	His	Gly
			35				40					45			
Glu	Ala	Val	Ile	Val	Pro	Asp	Val	Lys	Gly	Met	Ser	Val	Ser	Glu	Ala
	50					55				60					
Glu	Lys	Met	Phe	Arg	Asn	His	Gly	Leu	Thr	Cys	Val	Val	Ser	Asp	Ser
	65				70					75				80	
Ser	Tyr	Val	Lys	Asn	Lys	Pro	Ser	Gly	Ile	Ile	Leu	Asp	Leu	Asn	Pro
			85					90						95	
Ser	Val	Gly	Gln	Lys	Val	Lys	Glu	Gly	Arg	Thr	Ile	Tyr	Leu	Thr	Ile
			100					105					110		
Asn	Thr	Leu	Ser	Thr	Pro	Leu	Ser	Val	Val	Pro	Asp	Val	Ala	Asp	Asn
			115					120					125		
Ser	Ser	Val	Arg	Gln	Ala	Gln	Ala	Lys	Leu	Ile	Ala	Ala	Gly	Phe	Lys
			130				135					140			
Leu	Thr	Glu	Asn	Arg	Met	Val	Ser	Gly	Glu	Lys	Asp	Trp	Val	Tyr	Gly
					150					155				160	
Val	Ile	Tyr	Gln	Gly	Arg	Gln	Leu	Gln	Ile	Gly	Asp	Lys	Ala	Pro	Ile
				165					170					175	
Gly	Ala	Thr	Leu	Thr	Leu	Met	Val	Gly	Asp	Gly	Val	Gln	Ser	Thr	Ala
			180					185					190		
Thr	Asp	Ser	Val	Asp	Met	Val	Glu	Asn	Ala	Ala	Met	Ser	Val	Glu	Asp
			195				200					205			
Ser	Gly	Thr	Asp	Asp	Asp	Ser	Trp	Phe							
			210				215								

&lt;210&gt; 8899

&lt;211&gt; 1027

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8899

Leu Asn Ile Ile Met Lys Pro Ile Leu Thr Ser Leu Ile Leu Leu Leu  
 1 5 10 15  
 Thr Ala Gly Leu Phe Pro Gln Ala Ala Thr Gln Glu Leu Ser Lys  
 20 25 30  
 Glu Leu Arg Ser Gln Ile Gly Asp Phe Leu Asn Gly Thr Ala Arg Lys  
 35 40 45  
 Glu Ile Ser Val Gly Lys Ile His Ile Asp Ser Val Asn Thr Glu Gly  
 50 55 60  
 Asn Asp Leu Ile Leu Phe Ala Asn Ile Asn Cys Ser Tyr Ile Pro Phe  
 65 70 75 80  
 Arg Thr Asp Asn Val Ser Lys Ile Tyr Gln Gly Ile Lys Ala Leu Leu  
 85 90 95  
 Pro Pro Glu Leu Ala Lys Arg Lys Leu Gln Ile Arg Thr Asp His His  
 100 105 110  
 Ala Ile Glu Glu Leu Ile Pro Leu Ala Leu Arg Asn Thr Arg Gly Arg  
 115 120 125  
 Lys Ile Pro Thr Phe Ser Tyr Lys Ala Asp Thr Pro Leu Ile Thr Arg  
 130 135 140  
 Leu Ser Val Pro Tyr Thr Pro Thr Asn Gly Leu Gln Asn Arg His Ile  
 145 150 155 160  
 Ala Leu Trp Gln Ser His Gly Phe Tyr Tyr Glu Ser Lys Leu Ala Arg  
 165 170 175  
 Trp Glu Trp Gln Arg Ala Arg Ile Phe Gln Thr Val Glu Asp Leu Tyr  
 180 185 190  
 Thr Gln Ser Tyr Val Leu Pro Phe Leu Val Pro Met Leu Glu Asn Ala  
 195 200 205  
 Gly Ala Thr Ile Leu Leu Pro Arg Glu Arg Asp Pro Gln Thr Val Glu  
 210 215 220  
 Ile Ile Val Asp Asn Asp Arg Cys Arg Asp Gly His Ser Val Tyr Ser  
 225 230 235 240  
 Glu Leu Asn Gly Ser Lys Met Trp Lys Asn Gly Glu Glu Ala Gly Phe  
 245 250 255  
 Ala His Leu Lys Arg Thr Tyr Lys Asp Phe Glu Asn Pro Phe Arg Glu  
 260 265 270  
 Gly Thr Tyr Arg Gln Val Glu Thr Thr Lys Lys Gly Thr Val Ser Val  
 275 280 285  
 Ala Glu Trp Ile Pro Glu Ile Pro Arg Ala Gly Arg Tyr Ala Val Tyr  
 290 295 300  
 Ile Ser Tyr Lys Thr Val Asn Asn Ser Thr Glu Asp Ala Leu Tyr Thr  
 305 310 315 320  
 Val Tyr His Gln Gly Gly Lys Ser Gln Phe Lys Val Asn Gln Gln Met  
 325 330 335  
 Gly Gly Gly Thr Trp Ile Tyr Leu Gly Thr Phe Ser Phe Gly Ile Gly  
 340 345 350  
 Lys Thr Asp Cys Lys Ile Val Leu Ser Asn Gln Ser Ala Lys Glu Gly  
 355 360 365  
 Arg Leu Val Thr Ala Asp Ala Val Lys Ile Gly Gly Gly Tyr Gly Asn  
 370 375 380  
 Ile Ala Arg Ser Ile Ser Glu Glu Gly Val Thr Val Asn Thr Lys Ser  
 385 390 395 400  
 Ser Asp Thr Met Ile Thr Asp Thr Tyr His Pro Lys Ala Gln Val Asn  
 405 410 415  
 Tyr Pro Tyr Glu Ile Ser Gly Tyr Pro Arg Phe Cys Glu Ala Ala Arg  
 420 425 430  
 Tyr Trp Met Gln Trp Ala Gly Ile Pro Asp Ser Val Tyr Ser Asp Ser  
 435 440 445  
 His Gly Lys Asn Asp Tyr Thr Asp Asp Tyr Lys Ser Arg Gly Ile Trp

450	Val	Asn	Tyr	Leu	Ala	Gly	Gly	Ser	Ala	Ala	Asn	Pro	Thr	Glu	Lys	Gly
465	Leu	Asn	Ile	Pro	Val	Asp	Met	Ala	Phe	Ala	Phe	His	Ser	Asp	Ala	Gly
				485						490					495	
Thr	Thr	Tyr	Gly	Asp	Thr	Ile	Ile	Gly	Thr	Leu	Gly	Ile	Phe	His	Thr	
			500					505					510			
Ser	Ala	Tyr	Asn	Gly	Ala	Tyr	Ala	Asn	Gly	Ala	Ser	Arg	Tyr	Ala	Ser	
			515					520				525				
Arg	Asp	Leu	Cys	Asp	Leu	Val	Gln	Ser	Asn	Ile	Val	Lys	Asp	Val	Arg	
			530			535					540					
Thr	Leu	Tyr	Glu	Pro	Glu	Trp	Thr	Arg	Arg	Gly	Met	Trp	Asn	Gln	Ser	
545					550					555					560	
Tyr	Tyr	Glu	Ala	Arg	Val	Pro	Arg	Val	Pro	Thr	Met	Leu	Leu	Glu	Leu	
				565					570					575		
Leu	Ser	His	Gln	Asn	Phe	Ala	Asp	Met	Arg	Tyr	Gly	Leu	Asp	Pro	Arg	
			580					585					590			
Phe	Arg	Phe	Thr	Val	Ser	Arg	Ala	Ile	Tyr	Lys	Gly	Ile	Leu	Gln	Phe	
			595				600					605				
Ile	Cys	Ser	Gln	Tyr	Lys	Met	Glu	Tyr	Val	Val	Gln	Pro	Leu	Pro	Val	
610					615						620					
Asp	His	Met	Ser	Leu	Arg	Phe	Glu	Glu	Gly	Asn	Arg	Ile	Lys	Leu	Ser	
625					630					635					640	
Trp	Gln	Pro	Val	Asp	Pro	Leu	Glu	Thr	Thr	Ala	Lys	Ala	Asp	Gln		
				645					650					655		
Tyr	Ile	Val	Tyr	Thr	Arg	Ile	Gly	Asp	Ser	Asp	Phe	Asp	Asn	Gly	Val	
			660					665					670			
Ile	Val	Asn	Ser	Pro	Thr	Tyr	Gln	Thr	Val	Ile	Pro	Ser	Gly	Val	Val	
			675				680					685				
Cys	Ser	Phe	Lys	Val	Thr	Ala	Leu	Asn	Lys	Gly	Gly	Glu	Ser	Phe	Pro	
690					695					700						
Ser	Glu	Ile	Leu	Ser	Ile	Gly	Lys	Thr	Phe	Asn	Asp	Lys	Gly	Thr	Val	
705					710					715					720	
Leu	Ile	Ile	Asn	Gly	Phe	Asp	Arg	Val	Cys	Ala	Pro	Ala	Asp	Phe	Thr	
			725					730						735		
Ala	Asp	Ala	Asp	Thr	Leu	Ala	Gly	Phe	Leu	Asp	Glu	Leu	Asp	His	Gly	
			740					745					750			
Val	Pro	Tyr	Lys	Thr	Asp	Ile	Ser	Tyr	Ile	Gly	Pro	Met	Lys	Glu	Phe	
			755				760					765				
Arg	Arg	Gln	Ile	Pro	Trp	Met	Asp	Asp	Asp	Ala	Ser	Gly	Phe	Gly	Asp	
770					775					780						
Ser	Tyr	Gly	Thr	His	Glu	Thr	Met	Val	Ile	Ala	Gly	Asn	Thr	Phe	Asp	
785					790					795					800	
Tyr	Pro	Ala	Ile	His	Gly	Glu	Ala	Ile	Leu	Lys	Ala	Gly	Tyr	Ser	Phe	
				805					810					815		
Thr	Ser	Cys	Ser	Asp	Glu	Ser	Ile	Val	His	Pro	Asp	Ser	Ser	Pro	Lys	
			820					825					830			
Glu	Arg	Glu	Thr	Gln	Ile	Cys	Met	Asn	Asp	Tyr	Lys	Tyr	Val	Asp	Leu	
			835				840					845				
Ile	Leu	Gly	Lys	Gln	Cys	Gln	Thr	Lys	Met	Gly	Arg	Gly	Gly	Ile	Arg	
850					855					860						
Pro	Leu	Glu	Phe	Lys	Thr	Phe	Ser	Lys	Glu	Met	Gln	Asn	Ala	Ile	Thr	
865					870					875					880	
Asn	Tyr	Cys	Gln	Ala	Gly	Gly	Asn	Phe	Phe	Val	Ser	Gly	Ala	Tyr	Val	
				885					890					895		
Ala	Ser	Asp	Leu	Trp	Asp	Asn	Arg	Leu	Val	Lys	Ala	Asn	Glu	Glu	Asp	
			900				905					910				
Lys	Lys	Phe	Ala	Met	Glu	Val	Leu	Lys	Tyr	Lys	Trp	Arg	Val	Gly	Gln	
			915				920					925				

Ala Ala Arg Asn Gly Lys Val Lys Ser Val Ala Ser Pro Phe Pro Glu  
 930 935 940  
 Ile Thr Gly Ser Tyr Thr Tyr Tyr Gln Asp Leu Asn Pro Glu Ser Tyr  
 945 950 955 960  
 Val Val Glu Ser Pro Asp Ala Leu Glu Pro Ala Ala Gln Gly Ala Phe  
 965 970 975  
 Thr Ile Leu Arg Tyr Ser Glu Asn Asn Leu Ser Ala Gly Ile Ala Tyr  
 980 985 990  
 Lys Gly Asn Tyr Lys Thr Cys Val Leu Gly Phe Pro Phe Glu Ala Ile  
 995 1000 1005  
 Arg Thr Val Thr Glu Arg Glu Leu Leu Met Lys Ala Ile Leu Thr Phe  
 1010 1015 1020  
 Phe Glu His  
 1025

<210> 8900  
 <211> 87  
 <212> PRT  
 <213> B.fragilis

<400> 8900  
 Lys Met Val Ile Ile Leu Phe Ile Lys Val Tyr Asp Met Gly Glu Ile  
 1 5 10 15  
 Lys Leu Ile Ser Ser Leu Phe Val Gln Gly Lys Arg Ser Leu Gly Asn  
 20 25 30  
 Cys Val Lys Ser Asn Glu Ser Ile Val Tyr Leu His Val Ala Gln Leu  
 35 40 45  
 Asp Asn Val Arg Leu Leu Leu Ile Lys Phe Ile Asp Glu Thr Gly Gly  
 50 55 60  
 Arg Lys Ile Ile Phe Tyr Leu Gln Ser Thr Leu Phe Leu Ile Phe Phe  
 65 70 75 80  
 Ala Lys Glu Asn Asp Glu Gln  
 85

<210> 8901  
 <211> 342  
 <212> PRT  
 <213> B.fragilis

<400> 8901  
 His Asn Pro Met Ile Lys Glu Gln Val Lys Ser Leu Trp Lys Leu Cys  
 1 5 10 15  
 Phe Asp Asp Ser Glu Ala Phe Ile Glu Leu Tyr Phe Arg Leu Arg Tyr  
 20 25 30  
 Asn Asn Glu Val Asn Leu Ala Ile Gln Ser Gly Glu Glu Val Ile Ala  
 35 40 45  
 Ala Leu Gln Met Leu Pro Tyr Pro Met Thr Phe Cys Asn Lys Ile Val  
 50 55 60  
 Pro Thr Ser Tyr Ile Ser Gly Ala Cys Thr His Pro Asp Tyr Arg Ala  
 65 70 75 80  
 Lys Gly Val Met Arg Glu Leu Leu Ser Gln Ser Phe Ala Arg Met Leu  
 85 90 95  
 Arg Asn Gly Val Leu Phe Ser Thr Leu Ile Pro Ala Glu Pro Trp Leu  
 100 105 110  
 Phe Gly Tyr Tyr Ala Lys Thr Gly Tyr Thr Pro Ala Phe Arg Ile Ser  
 115 120 125  
 His Lys Val Phe Ser Leu Ser Glu Leu Thr Ile Gly Pro Glu Pro Asp  
 130 135 140  
 Thr Met Ile Glu Glu Thr Thr Glu Tyr Gln Glu Asp Tyr Tyr Gln Tyr

145 150 155 160  
 Leu Thr Gly Lys Leu Ser Glu Arg Ala Cys Cys Leu Gln His Thr Pro  
 165 170 175  
 Thr Asp Phe Lys Val Val Leu Ala Asp Leu Ala Leu Thr Gln Asn Thr  
 180 185 190  
 Val Leu Ile Ala Arg Lys Asp Asn Arg Val Thr Gly Ile Ala Val Ala  
 195 200 205  
 Tyr Lys His Asp Asp Ser Ser Tyr Ile Asn Glu Leu Phe Ala Asp Asn  
 210 215 220  
 Glu Ala Val Arg Ala Gln Leu Leu Tyr Arg Ala Gly Leu Arg Asn Gly  
 225 230 235 240  
 Thr Glu Arg Ile Ile Leu Gln Leu Pro Pro Val Glu Ser Leu Pro Ser  
 245 250 255  
 Val Pro Leu Gly Met Ala Arg Ile Ile Asp Ala Arg Ala Val Leu Gln  
 260 265 270  
 Leu Tyr Ala Ala Gly Cys Pro Glu Val Glu Met Asn Ile Glu Leu Thr  
 275 280 285  
 Asp Glu Gln Leu Ser Val Asn Asn Gly Tyr Tyr Tyr Leu Cys Lys Gly  
 290 295 300  
 Lys Cys Met Thr Ser Glu Val Arg Leu Pro Gly Val His Thr Arg Met  
 305 310 315 320  
 Thr Ile Ala Glu Leu Ser Glu Lys Ile Leu Asp Glu Met Gln Pro Tyr  
 325 330 335  
 Met Ser Leu Met Met Asn  
 340

<210> 8902  
 <211> 105  
 <212> PRT  
 <213> B.fragilis

<400> 8902  
 Glu Asn Lys Met Lys Thr Arg Met Lys Ile Thr Ile Ala Phe Val Ala  
 1 5 10 15  
 Val Met Val Leu Ser Phe Thr Gly Tyr Asn Val Tyr Lys Thr Gln Lys  
 20 25 30  
 Ala Ile Gln Leu Ser Asp Val Ala Met Ala Asn Val Glu Ala Leu Ala  
 35 40 45  
 Asp Gly Glu Gly Thr Asn Ala Gly Tyr Cys Tyr Leu Glu Asp Thr Trp  
 50 55 60  
 Ser Thr Lys Arg Gly Tyr Lys Tyr Phe Cys Asp Ser Lys Thr Asp Lys  
 65 70 75 80  
 Asn Thr Ile Tyr Pro Cys Pro Ser Ser Met Glu Ser Gly Trp Tyr Asp  
 85 90 95  
 Asp Asn Lys Gln Asp Arg Cys Thr Lys  
 100 105

<210> 8903  
 <211> 313  
 <212> PRT  
 <213> B.fragilis

<400> 8903  
 Glu Thr Lys Met Asn Lys Glu Ile Glu Thr Leu Leu Ser Glu Gln Leu  
 1 5 10 15  
 Ser Ser Trp Glu Thr Ala Gln Asn Asn Tyr Ala Val Leu Lys Arg Val  
 20 25 30  
 Arg Ile Lys Asp Val Lys Val Asn Gly Cys Leu Tyr Arg Ile Gln Phe  
 35 40 45

Asn Pro Ala Arg Ile Val Ser Ser Ala Ala Lys Val Asp Asp Lys Ser  
 50 55 60  
 Ile Gln Glu Arg Lys Cys Phe Leu Cys Pro Ala Asn Leu Pro Pro Met  
 65 70 75 80  
 Gln Lys Gly Ile Pro Phe Gly Glu His Tyr Gln Ile Leu Val Asn Pro  
 85 90 95  
 Phe Pro Ile Phe Pro Lys His Leu Thr Val Pro Glu Leu Gln His Val  
 100 105 110  
 Glu Gln Arg Ile Leu His Arg Phe Ser Asp Met Leu Asp Leu Ala Thr  
 115 120 125  
 Tyr Ala Glu Asp Tyr Ile Ile Phe Tyr Asn Gly Pro Gln Cys Gly Ala  
 130 135 140  
 Ser Ala Pro Asp His Leu His Phe Gln Ala Gly Asn Lys Gly Phe Leu  
 145 150 155 160  
 Pro Ile Glu Gln Glu Trp Lys Glu Lys Arg Gly Glu Lys Val Ile Thr  
 165 170 175  
 Cys Lys Asp Ala Thr Leu Trp Ala Leu Asn Asp Tyr Pro Arg Ala Thr  
 180 185 190  
 Leu Val Ile Glu Ala Gly Ser Lys Glu Thr Ala Ile Met Leu Phe Asn  
 195 200 205  
 Thr Val Tyr Gln Ala Met Pro Ser Thr Ser Gly Glu Asp Glu Pro Met  
 210 215 220  
 Met Asn Val Leu Val Trp Lys Glu Gln Lys Asn Trp Ile Val Cys Ile  
 225 230 235 240  
 Phe Pro Arg Asn Lys His Arg Pro Ser Cys Tyr Thr Ala Glu Gly Asp  
 245 250 255  
 Thr Asn Ile Leu Ile Ser Pro Ala Ser Val Asp Met Gly Gly Val Phe  
 260 265 270  
 Ile Thr Pro Gln Glu Lys Asp Phe Glu Lys Ile Thr Ala Asn Asp Ile  
 275 280 285  
 Ala Asp Ile Leu Gly Glu Val Cys Leu Arg Pro Ala Ala Phe Arg Ile  
 290 295 300  
 Leu Ile Glu Arg Ile Lys Gln Gln Leu  
 305 310

&lt;210&gt; 8904

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8904

Lys Ala Val Val Asp Val Cys Gln Ser Val Asp Gln Leu Phe Gly Arg  
 1 5 10 15  
 Ser Ser Met Arg Ile Trp Thr Leu His Ile Val Leu Ser Val Leu Phe  
 20 25 30  
 Ser Val Phe Leu Phe Ser Cys Asn Glu Asp Asp Gly Ala Pro Tyr Pro  
 35 40 45  
 Ser Val Arg Leu Glu Phe Leu Thr Ala Glu Ser Gly Ala Asp Gly Arg  
 50 55 60  
 Leu Gln Thr Leu Val Thr Asp Lys Gly Glu Arg Leu Val Val Ala Glu  
 65 70 75 80  
 Asp Arg Thr Glu Ser Glu Leu Leu Pro Asn Ser Ser Ser Arg Val Val  
 85 90 95  
 Ser Asn Tyr Glu Val Leu Ser Ser Val Gly Gly Arg Lys Glu Ile Arg  
 100 105 110  
 Ile Tyr Ala Leu Ala Asn Thr Val Ser Pro Val Pro Leu Pro Ala Gly  
 115 120 125  
 Glu Phe Arg Asn Gly Leu Lys Phe Asp Pro Val Asp Met Leu Ser Ile  
 130 135 140

Trp Met Gly Arg Asp Tyr Leu Asn Met Thr Leu Ser Ile Arg Ala Gln  
 145 150 155 160  
 Asn Ala Arg His Thr Phe His Phe Ile His Glu Ser Val Glu Arg Asp  
 165 170 175  
 Ala Val Thr Gly Lys Leu Lys Val His Leu Met Leu Tyr His Asp Asp  
 180 185 190  
 Gly Gly Asp Val Glu Ala Tyr Ala Lys Arg Ala Tyr Val Ser Val Pro  
 195 200 205  
 Leu Arg Gln Tyr Thr Ser Asp Ile Gly Glu Ser Ala Ile Ile Tyr Phe  
 210 215 220  
 Asn Phe His Thr Tyr Asp Gly Glu Val Gln Thr Tyr Gln Phe Glu Tyr  
 225 230 235 240  
 Val Pro Ser His Leu Thr Ile Asn Tyr  
 245

<210> 8905  
 <211> 164  
 <212> PRT  
 <213> B.fragilis

<400> 8905  
 Lys Val Tyr Val Ile Leu Gln Phe Asp Arg Phe Ser Arg Phe Lys Arg  
 1 5 10 15  
 Ala Asn Ile Glu Asn Val Pro Tyr Ile Cys Asp Ser Ser Val Ile Tyr  
 20 25 30  
 Leu Gly Met Leu Ser Tyr Ile Lys Lys Tyr Pro Val Ser Leu Phe Ile  
 35 40 45  
 Ile Leu Ala Val Ile Tyr Leu Ser Phe Phe Lys Pro Pro Ser Thr Glu  
 50 55 60  
 Ile Ser Lys Ile Pro Asn Ile Asp Lys Val Val His Ile Cys Met Tyr  
 65 70 75 80  
 Phe Gly Met Ser Gly Met Leu Trp Leu Glu Phe Leu Arg Ala His Arg  
 85 90 95  
 Arg Asp His Thr Pro Val Trp His Ala Trp Val Gly Ala Phe Ile Cys  
 100 105 110  
 Pro Val Leu Phe Ser Gly Cys Val Glu Leu Leu Gln Glu Tyr Cys Thr  
 115 120 125  
 Thr Tyr Arg Gly Gly Asp Trp Met Asp Phe Ala Ala Asn Thr Thr Gly  
 130 135 140  
 Ala Val Leu Ala Ser Leu Ile Gly Tyr Phe Ile Ile Arg Pro Arg Ile  
 145 150 155 160  
 Leu Ser Lys Lys

<210> 8906  
 <211> 63  
 <212> PRT  
 <213> B.fragilis

<400> 8906  
 Ile Leu Arg Val Gly Val His Leu Ala Tyr Ser Lys Glu Pro Val Ser  
 1 5 10 15  
 Ser Gly Lys Ser Ala Asp Ile Gln Val Thr Tyr Arg Ala Glu His Pro  
 20 25 30  
 Glu His Phe Glu Lys Thr Ile Thr Val Tyr Cys Asn Thr Ser Thr Ser  
 35 40 45  
 Pro Ile Arg Leu Lys Ile Arg Gly Asn Ala Val Asp Lys Glu Asn  
 50 55 60

<210> 8907  
 <211> 323  
 <212> PRT  
 <213> B.fragilis

<400> 8907

Gln Asn Ser Phe Ile Phe Val Ile Tyr Lys Gln Leu Lys Gly Asn Asn  
 1 5 10 15  
 Asn Phe Met Ile Ala Phe Arg Asp Ile Thr Ile Gln Asp Lys Asp Thr  
 20 25 30  
 Ile Thr Ala Tyr Thr Met Asn Ser Cys Arg Arg Asn Cys Asp Leu Ser  
 35 40 45  
 Phe Ser Asn Leu Cys Ser Trp Arg Phe Leu Tyr His Thr Lys Phe Ala  
 50 55 60  
 Ile Ile Asn Asn Phe Leu Val Phe Lys Phe Trp Ala Gly Asp Glu Leu  
 65 70 75 80  
 Ala Tyr Met Met Pro Val Gly Glu Gly Asn Leu Glu Glu Val Leu Asn  
 85 90 95  
 Glu Leu Ile Glu Asp Ala Arg Gln Glu Gly Glu Pro Phe Cys Met Leu  
 100 105 110  
 Gly Val Cys Ser Cys Met Arg Glu Asp Leu Glu Ala Ile Met Pro Gly  
 115 120 125  
 Gln Phe Gly Phe Thr Val Asp Arg Asp Tyr Ala Asp Tyr Ile Tyr Leu  
 130 135 140  
 Arg Ser Asp Leu Ala Thr Leu Lys Gly Lys Lys Phe Gln Ser Lys Arg  
 145 150 155 160  
 Asn His Ile Asn Lys Phe Arg Asn Thr Tyr Pro Asp Tyr Glu Tyr Ser  
 165 170 175  
 Pro Ile Thr Lys Asp Arg Ile Gln Glu Cys Leu Glu Leu Glu Ala Lys  
 180 185 190  
 Trp Cys Lys Ala Asn Asp Cys Asp Gln Gln Glu Gly Thr Gly Asn Glu  
 195 200 205  
 Arg Arg Ala Leu Ile Tyr Ala Leu Asn His Phe Glu Glu Leu Gly Leu  
 210 215 220  
 Thr Gly Gly Ile Leu His Val Asn Gly Gln Ile Val Ala Phe Thr Phe  
 225 230 235 240  
 Gly Met Pro Ile Asn Lys Glu Thr Phe Gly Val His Val Glu Lys Ala  
 245 250 255  
 Asp Thr Ser Ile Asp Gly Ala Tyr Ala Met Ile Asn Tyr Glu Phe Ala  
 260 265 270  
 Asn His Ile Pro Glu Gln Tyr Ile Tyr Ile Asn Arg Glu Glu Asp Leu  
 275 280 285  
 Gly Ile Glu Gly Leu Arg Lys Ala Lys Leu Ser Tyr His Pro Glu Thr  
 290 295 300  
 Ile Leu Glu Lys Tyr Met Ala Cys Leu Lys Glu Gln Pro Val Glu Met  
 305 310 315 320  
 Ile Lys Trp

<210> 8908  
 <211> 455  
 <212> PRT  
 <213> B.fragilis

<400> 8908

Cys His Thr Val Val Phe Gln Cys Leu Met Val Asn Ser His Thr Val  
 1 5 10 15  
 Arg Ser Thr Asp Gly Val Leu Thr Thr Val Thr Phe Thr Asp Thr Val  
 20 25 30



Phe	Phe	Ile	Ile	Leu	Ala	Met	Glu	Val	Glu	Leu	Lys	Ile	Val	Asn	Asp
		35					40					45			
Leu	Thr	Ser	Leu	Phe	Arg	Gln	Ser	Val	Phe	Leu	Tyr	Gln	Arg	His	Tyr
	50					55					60				
Ser	Gln	Phe	His	Arg	Cys	Gln	Cys	Ser	Arg	Gln	Phe	Gln	Tyr	Asn	Ala
65					70					75				80	
Ala	Phe	Thr	Ile	Phe	Gln	Leu	Leu	Phe	Ala	Ile	Ser	Ser	Arg	His	Asn
				85					90					95	
Thr	Glu	Glu	His	Thr	Ile	Asn	Thr	Asp	Arg	Arg	Phe	Asp	Tyr	Val	Arg
			100					105					110		
Ser	Ile	Arg	Phe	Val	Gln	Phe	Arg	Ile	Glu	Ile	Leu	Asn	Ala	Leu	Ser
		115					120					125			
Arg	Lys	Phe	Phe	Val	Leu	Arg	Lys	Val	Glu	Ile	Arg	Thr	Gly	Val	Asn
	130					135					140				
Thr	Phe	Tyr	Phe	Phe	Glu	Thr	Lys	Trp	His	Gln	Glu	Leu	Asn	Val	Ser
145					150					155				160	
Ser	Gly	Val	Cys	Ile	Val	Ser	Gln	Phe	Ile	Val	Ile	Val	Glu	Thr	Ile
				165					170					175	
Met	Ile	Val	Thr	Lys	Ala	Gln	Cys	Leu	Val	Pro	Leu	Gln	Thr	Asn	Phe
			180					185					190		
Phe	Pro	Phe	Leu	Glu	Ile	Phe	Gln	Phe	Ala	Ala	Arg	Thr	Asn	Lys	Glu
		195					200					205			
Leu	His	Leu	His	Leu	Phe	Glu	Leu	Thr	His	Thr	Glu	Asp	Glu	Leu	Thr
		210					215				220				
Gly	Tyr	Asn	Leu	Val	Thr	Glu	Ser	Phe	Thr	Asp	Leu	Ser	Asp	Thr	Glu
225					230					235					240
Arg	Asn	Phe	His	Ala	Ala	Gly	Arg	Leu	Tyr	Val	Gln	Ile	Ile	Asp	Lys
				245					250					255	
Asp	Thr	Leu	Cys	Arg	Leu	Arg	Thr	Lys	Ile	Asp	Phe	His	Arg	Thr	Ile
			260					265					270		
Gly	Ser	Arg	Thr	His	Ile	Gly	Arg	Glu	His	Gln	Ile	Glu	Leu	Thr	Asn
		275					280					285			
Phe	Cys	Pro	Ile	Leu	Ser	Thr	Gly	Asn	Arg	Ala	Ser	Tyr	Phe	Phe	Val
		290				295				300					
Asn	Asn	Asp	Leu	Thr	Glu	Leu	Phe	Gln	Ile	Val	Ile	Val	Gln	Arg	Phe
305					310					315					320
Cys	Glu	Thr	Phe	Val	Gln	Cys	Ile	Thr	Leu	Cys	Leu	Met	Leu	Lys	Asn
				325					330					335	
Thr	Pro	Ile	Gly	Ala	Ala	Glu	Leu	Ser	Phe	Val	Glu	Ser	Phe	Thr	Lys
			340					345					350		
Ser	Phe	Gly	Ser	Phe	Gly	His	Leu	Phe	Ile	Asn	Leu	Ile	Ile	Val	Leu
		355					360					365			
Ser	Gln	Leu	Ile	Phe	Asn	Gln	His	Ile	Gly	Thr	Val	Ala	Phe	Phe	Arg
		370				375					380				
Val	Phe	Ile	Ile	Asn	Gln	Arg	Ile	Val	Lys	Cys	Ile	His	Met	Ser	Gly
385					390					395					400
Ser	Leu	Pro	Asp	Gly	Arg	Val	His	Lys	Asp	Cys	Arg	Val	Asn	Thr	Asp
				405					410					415	
Asn	Val	Phe	Val	Gln	Gln	His	His	Ala	Val	Pro	Pro	Val	Phe	Phe	Asn
			420					425					430		
Ile	Val	Phe	Gln	Phe	Asn	Thr	His	Leu	Ser	Val	Val	Ile	His	Arg	Ala
		435					440					445			
Gln	Ser	Val	Val	Asp	Ile	Ala									
		450				455									

&lt;210&gt; 8909

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8909

Glu	Arg	Gly	Phe	Ser	Thr	Phe	Asp	Val	Phe	Arg	Leu	Leu	Ser	Gly	Ser
1				5					10				15		
Leu	Val	Lys	Ile	Ser	Val	Glu	Trp	Leu	Asn	Leu	Ser	Tyr	Arg	Arg	Gly
		20					25				30				
Gln	Gly	Gly	His	Arg	Val	Phe	Leu	Ser	Phe	Arg	Tyr	Ala	Tyr	Ile	Ile
		35					40				45				
Val	Pro	Ile	Ser	Val	Val	Phe	Val	Leu	Trp	Gly	Gly	Met	Lys	Gly	Gly
	50					55				60					
Asn	Lys	Ile	Glu	Leu	Pro	Ala	Phe	Gln	Pro	Asp	Ile	Pro	Ala	Glu	Cys
65					70				75					80	
Arg	Glu	Ala	Val	Leu	Met	Ser	Leu	Cys	Ile	Leu	Met	Leu	Ser	His	Asp
			85						90				95		
Leu	Arg	Lys	Asn	Arg	His	Glu	Tyr	Arg	Ser	Arg	Leu	Phe	Arg	Leu	His
			100					105					110		

&lt;210&gt; 8910

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8910

Gly	Arg	Gly	Phe	Leu	Ile	Ile	Leu	Thr	Gly	Leu	Ile	Tyr	Phe	Leu	Thr
1				5					10				15		
Leu	Thr	Gly	Tyr	Tyr	Phe	Asn	Asn	Lys	Phe	Gln	Asp	Val	Gly	Thr	Met
		20						25				30			
Lys	Arg	Leu	Phe	Tyr	Ile	Leu	Gln	Pro	His	Leu	Phe	Ile	Phe	Trp	Arg
		35					40				45				
Ile	Phe	Ile	Lys	Gln	Lys	Phe	Gln	Cys	Leu	Ser	Leu	Leu	Ser	Phe	Phe
	50					55					60				

&lt;210&gt; 8911

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8911

Ala	Lys	Arg	Val	Leu	His	Asn	Lys	Thr	Thr	Met	Ser	Arg	Ile	Phe	Phe
1				5					10				15		
Ile	Lys	Ile	Val	Leu	Gly	Gly	Ser	Phe	Cys	Cys	Ser	Lys	Asp	Thr	Phe
		20					25					30			
Tyr	Phe	Asn	Ile	Lys	Asn	Asn	Tyr	Leu	Glu	Ile	Phe	Tyr	Ile	Ile	Ile
		35					40				45				
Asp	Asn	Leu	Gln	Ile	Gly	Cys	Tyr	Arg	Val	Lys	Leu	Phe	Ser		
	50					55					60				

&lt;210&gt; 8912

&lt;211&gt; 168

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8912

Ser	Val	Leu	Leu	Ile	Ile	Val	Leu	Tyr	Ala	Val	Gly	Met	Thr	Ala	Gln
1				5					10				15		
Ala	Gln	Lys	Phe	Ala	Leu	Ile	Asp	Met	Glu	Tyr	Ile	Val	Lys	Asn	Ile
		20					25					30			
Pro	Ala	Tyr	Glu	Arg	Ala	Asn	Glu	Gln	Leu	Ser	Gln	Ala	Thr	Lys	Gln
		35					40					45			

Trp Gln Gly Glu Val Glu Val Leu Ala Lys Glu Ala Arg Thr Met Phe  
 50 55 60  
 Lys Asp Tyr Leu Ala Ala Tyr Ala Lys Leu Thr Ala Ala Gln Lys Thr  
 65 70 75 80  
 Gln Ile Glu Asp Ala Val Val Glu Lys Glu Arg Val Ala Ser Gln Leu  
 85 90 95  
 Glu Arg Glu Cys Phe Gly His Glu Gly Glu Leu Phe Lys Lys Arg Glu  
 100 105 110  
 Glu Leu Met Lys Pro Ile Leu Asp Glu Ile Tyr Asn Ala Val Lys Ala  
 115 120 125  
 Val Ala Glu Glu Asn Gly Tyr Ala Val Val Val Asp Arg Ala Ser Ala  
 130 135 140  
 Ser Ser Ile Ile Phe Ala Thr Pro Arg Ile Asp Val Ser Asn Glu Val  
 145 150 155 160  
 Leu Ala Lys Leu Gly Tyr Ser Asn  
 165

<210> 8913

<211> 447

<212> PRT

<213> B.fragilis

<400> 8913

Leu Phe Ile Phe Val Thr Gln Phe Leu Leu Leu Pro Gly Asp Arg  
 1 5 10 15  
 Lys Tyr Arg Pro Glu Ala His Leu Phe Gly Gln Gln Ile Leu Asn Val  
 20 25 30  
 Phe Pro Ser Tyr Met Ile Val Leu Ser Phe Ala Gln Ile Thr Asp Leu  
 35 40 45  
 Phe Arg Glu Tyr Phe Gly Arg Cys Phe Leu Val Leu Lys Cys Phe Glu  
 50 55 60  
 Ile Gln Gly Ile Leu Ser Ser Ser Gln Cys Asp Thr Ser Cys Phe Met  
 65 70 75 80  
 Val Gly Ser Tyr His Asn Gln Ser Phe Phe Arg Val Phe Leu Val Lys  
 85 90 95  
 Leu Ile Ser Asn Phe Asp Gly Ile Ile His Ile Arg His Phe Val Glu  
 100 105 110  
 His Arg Ser Gly Ile Ile Pro Val Thr Ser Pro Val Tyr Leu Thr Pro  
 115 120 125  
 Phe Tyr His Gln Lys Glu Thr Phe Val Phe Ala Phe Ser Gln Lys Val  
 130 135 140  
 Asn Ser Ala Phe Cys Asn Leu Cys Gln Ser Gln Val Ser Phe Phe Thr  
 145 150 155 160  
 Ile Asp Ser Ile Arg Gln Arg Ala Arg Ile Gly Thr Phe Phe Leu Asn  
 165 170 175  
 Gln Tyr His Leu Thr Cys Arg Ser Ser Phe Gly Phe Ile Ile Val Ile  
 180 185 190  
 Pro Thr Ser Asn Gly Val Thr Gly Phe Phe Lys His Arg Glu Asn Ala  
 195 200 205  
 Arg Ser Phe Phe Leu Ile Ile Ser Ser Gly Trp Phe Gln Glu Thr Gly  
 210 215 220  
 Thr Gly Ile Lys Ile Lys Thr Cys Phe Arg Lys Ile Gly Ser Tyr Phe  
 225 230 235 240  
 Ile Ile His Ile Pro Ile Arg Leu Met Cys Val Glu Ser Ser Arg Ser  
 245 250 255  
 Ser Met Ile Asp Thr Asp Thr Gly Ser Asn Ser His Pro Phe Thr Gly  
 260 265 270  
 Phe Leu Cys Phe Leu Ser Asn Cys Leu Gln Arg Ile Leu Leu Ile Ile  
 275 280 285

His Pro Asn Gly Thr Ile Ile Ser Leu Phe Ala Gly Gly Lys Ser Ser  
 290 295 300  
 Ser Arg Ser Arg Arg Ile Ser His Gly Ile Ser Gly Arg Glu Ser Ser  
 305 310 315 320  
 Ser His Cys Pro His Arg Glu Leu Cys Lys Lys Gln Arg Leu Tyr Thr  
 325 330 335  
 Asn Ala Ala Leu Leu Asp Phe Gly Thr Ile His Phe Arg Thr Ile His  
 340 345 350  
 Leu Ile Asp Thr His Ser Ile Thr Asn Glu Ile Glu Asn Ile Phe Cys  
 355 360 365  
 Leu Ser Ile Gly Tyr Asn Cys His Thr Asp Lys Lys Lys Glu Ile Lys  
 370 375 380  
 Lys Ser Phe His Ser Cys Thr Ile Leu Ser Leu Phe Glu Leu Val Ile  
 385 390 395 400  
 Ala Lys Ile Lys Ile Leu Lys Arg Arg Lys Gly Glu Arg Asp Met Asn  
 405 410 415  
 Ile Leu Leu Asn Arg Ser Pro Ser Ile Asn Tyr Pro Ser Thr Gln Thr  
 420 425 430  
 Ala Ile Ser Asn Leu Pro His Ile Lys Lys Pro Glu Asn Arg Glu  
 435 440 445

<210> 8914

<211> 404

<212> PRT

<213> B.fragilis

<400> 8914

Lys Val Ser Leu Leu Gln Gln Lys Leu Pro Pro Asn Thr Ile Phe Met  
 1 5 10 15  
 Lys Lys Ile Leu Leu Ile Val Val Leu Leu Cys Ser Thr Leu Phe Ala  
 20 25 30  
 Gln Ala Gln Lys Ser Asp Val Ile Ile Gly Ala Glu Gln Thr Lys Ala  
 35 40 45  
 Tyr Phe Pro Ile Leu Lys Asn Lys Arg Ile Ala Ile Phe Ser Asn His  
 50 55 60  
 Thr Gly Met Val Gly Asn Lys His Leu Leu Asp Ile Leu Leu Glu Asn  
 65 70 75 80  
 Asn Phe Asn Val Val Ala Ile Phe Ser Pro Glu His Gly Phe Arg Gly  
 85 90 95  
 Asn Ala Asp Ala Gly Glu His Val Ser Ser Thr Ile Asp Ser Lys Thr  
 100 105 110  
 Gly Val Pro Ile Leu Ser Leu Tyr Asn Gly Lys Ser Lys Lys Pro Ser  
 115 120 125  
 Glu Ala Ser Met Lys Lys Phe Asp Ile Leu Ile Val Asp Ile Gln Asp  
 130 135 140  
 Val Gly Leu Arg Phe Tyr Thr Tyr Tyr Ile Ser Met Val Arg Leu Met  
 145 150 155 160  
 Asp Ala Cys Ala Glu Tyr Asp Arg Lys Ile Leu Ile Leu Asp Arg Pro  
 165 170 175  
 Asn Pro Asn Gly His Tyr Val Asp Gly Pro Ile Leu Asp Met Lys Tyr  
 180 185 190  
 Lys Ser Gly Val Gly Gly Leu Pro Ile Pro Ile Val His Gly Met Thr  
 195 200 205  
 Leu Gly Glu Leu Ala Leu Met Val Asn Gly Glu Arg Trp Leu Pro Ser  
 210 215 220  
 Ser Arg Ile Cys Asp Val Thr Val Ile Pro Cys Lys Asn Tyr Thr His  
 225 230 235 240  
 Gln Thr Met Tyr Arg Leu Pro Ile Pro Pro Ser Pro Asn Leu Pro Asn  
 245 250 255

Met Lys Ala Ile Tyr Leu Tyr Pro Ser Ile Cys Leu Phe Glu Gly Thr  
 260 265 270  
 Pro Val Ser Leu Gly Arg Gly Thr Thr Leu Pro Phe Gln Val Tyr Gly  
 275 280 285  
 His Pro Asn Met Thr Gly Tyr Asn Tyr Asn Phe Thr Pro Arg Ser Ile  
 290 295 300  
 Pro Gly Ala Lys Asn Pro Pro Gln Leu Asn Lys Leu Cys His Gly Val  
 305 310 315 320  
 Asn Leu Ser Asn Leu Ser Asp Glu Glu Ile Trp Lys Lys Gly Ile Asn  
 325 330 335  
 Leu Asp Tyr Leu Ile Asp Ala Tyr His Asn Leu Asn Met Gly Asp Arg  
 340 345 350  
 Phe Phe Arg Pro Phe Phe Glu Leu Leu Val Gly Thr Asp Tyr Val Arg  
 355 360 365  
 Lys Met Ile Glu Gly Gly Lys Ser Ala Asp Glu Ile Lys Ala Arg Trp  
 370 375 380  
 Lys Arg Asp Val Glu Arg Phe Lys Ile Gln Arg Lys Pro Tyr Leu Leu  
 385 390 395 400  
 Tyr Gln Asp Asn

<210> 8915  
 <211> 494  
 <212> PRT  
 <213> B.fragilis

<400> 8915  
 Asn Ile Ser Phe Ile Asn Leu Lys Ser Met Thr Pro Val Ala Val Leu  
 1 5 10 15  
 Ile Thr Ile Ala Ser Tyr Phe Leu Ile Leu Phe Thr Ile Ser Tyr Ile  
 20 25 30  
 Ala Gly Arg Lys Ala Asp Asn Glu Gly Phe Phe Val Gly Asn Arg Lys  
 35 40 45  
 Ser Ala Trp Tyr Val Val Ala Phe Ala Met Ile Gly Ser Ser Ile Ser  
 50 55 60  
 Gly Val Thr Phe Val Ser Val Pro Gly Met Val Gly Ile Ser Asn Phe  
 65 70 75 80  
 Ser Tyr Leu Gln Met Val Leu Gly Phe Val Thr Gly Gln Ile Ile Ile  
 85 90 95  
 Ala Phe Val Leu Ile Pro Leu Phe Tyr Arg Met Asn Leu Val Ser Ile  
 100 105 110  
 Tyr Glu Tyr Leu Glu Asn Arg Phe Gly Thr Ser Ser Tyr Lys Thr Gly  
 115 120 125  
 Ala Trp Phe Phe Phe Ile Ser Lys Ile Leu Gly Ala Ala Val Arg Leu  
 130 135 140  
 Tyr Leu Val Cys Leu Thr Leu Gln Leu Leu Val Phe Glu Pro Phe His  
 145 150 155 160  
 Met Pro Phe Ile Met Asn Val Ile Leu Thr Val Ala Leu Val Trp Leu  
 165 170 175  
 Tyr Thr Phe Arg Gly Gly Val Lys Ser Leu Ile Trp Thr Asp Ser Leu  
 180 185 190  
 Lys Thr Phe Cys Leu Ile Val Ser Val Val Leu Cys Ile Tyr Tyr Ile  
 195 200 205  
 Ser Thr Asp Leu Lys Leu Ser Phe Thr Glu Met Phe Ser Thr Val Ser  
 210 215 220  
 Asp Ser Ala Leu Ser His Met Phe Phe Phe Asp Asn Val Asn Asp Lys  
 225 230 235 240  
 Arg Tyr Phe Phe Lys Gln Phe Leu Ala Gly Val Phe Thr Met Ile Ala  
 245 250 255

Met Thr Gly Leu Asp Gln Asp Met Met Gln Arg Asn Leu Ser Cys Lys  
 260 265 270  
 Asn Phe Lys Asp Ser Gln Lys Asn Met Ile Thr Ser Gly Ile Ser Gln  
 275 280 285  
 Phe Phe Ile Ile Leu Leu Phe Leu Met Leu Gly Val Leu Leu Tyr Thr  
 290 295 300  
 Phe Thr Ser His Gln Gly Ile Thr Asn Pro Ala Lys Ser Asp Glu Leu  
 305 310 315 320  
 Phe Pro Met Ile Ala Thr Gly Gly Tyr Phe Pro Ile Ile Val Gly Ile  
 325 330 335  
 Leu Phe Ile Ile Gly Leu Ile Ser Ser Ala Tyr Ser Ala Ala Gly Ser  
 340 345 350  
 Ala Leu Thr Ala Leu Thr Thr Ser Phe Thr Val Asp Ile Leu Gly Ile  
 355 360 365  
 Lys Gly Lys Thr Glu Asp Thr Val Arg Lys Thr Arg Lys Lys Val His  
 370 375 380  
 Val Gly Met Ala Ile Val Met Gly Ile Val Ile Phe Ile Phe Asn Leu  
 385 390 395 400  
 Leu Asn Asn Thr Ser Val Ile Asp Ala Val Tyr Ile Leu Ala Ser Tyr  
 405 410 415  
 Thr Tyr Gly Pro Ile Leu Gly Leu Phe Ala Phe Gly Ile Leu Thr Lys  
 420 425 430  
 Arg Gln Val Arg Asp Arg Tyr Ile Pro Leu Val Ser Ile Leu Ser Pro  
 435 440 445  
 Ile Leu Cys Phe Ile Leu Gln Lys Asn Ser Glu Thr Trp Phe His Gly  
 450 455 460  
 Tyr Gln Phe Ser Tyr Glu Leu Leu Ile Phe Asn Ala Leu Phe Thr Phe  
 465 470 475 480  
 Ile Gly Leu Cys Phe Leu Ile Lys Lys Thr Ile Asn Leu Thr  
 485 490

<210> 8916  
 <211> 188  
 <212> PRT  
 <213> B.fragilis

<400> 8916  
 Phe His Thr Phe Ala Pro Asp Asn Leu Lys Val Ile Ile Gln Ile Asn  
 1 5 10 15  
 Asn Lys Thr Met Leu Lys Lys Ile Ala Leu Leu Met Met Leu Ile Leu  
 20 25 30  
 Pro Met Gly Val Phe Ala Gln Asn Leu Lys Phe Gly His Ile Asn Ala  
 35 40 45  
 Met Glu Ile Val Ser Ala Met Pro Glu Tyr Thr Lys Ala Gln Ser Glu  
 50 55 60  
 Leu Gln Ala Leu Asn Lys Gln Leu Gly Gln Asp Leu Gln Arg Ser Gln  
 65 70 75 80  
 Glu Glu Phe Ser Lys Lys Tyr Gln Glu Phe Met Gln Gln Lys Asp Ser  
 85 90 95  
 Leu Pro Ala Val Ile Ala Glu Arg Arg Gln Lys Glu Leu Glu Asp Met  
 100 105 110  
 Met Gln Arg Gln Glu Gln Phe Gln Ala Lys Ala Gln Gln Asp Met Glu  
 115 120 125  
 Lys Ala Asn Asn Asp Leu Met Ala Pro Val Tyr Lys Lys Leu Asp Asp  
 130 135 140  
 Ala Ile Lys Ala Val Gly Ala Ala Glu Gly Val Ile Tyr Ile Phe Asp  
 145 150 155 160  
 Met Ala Arg Thr Pro Ile Pro Tyr Val Asn Glu Ala Gln Ser Ile Asn  
 165 170 175

Leu Thr Pro Lys Val Lys Thr Gln Leu Gly Ile Lys  
 180 185

<210> 8917  
 <211> 521  
 <212> PRT  
 <213> B.fragilis

<400> 8917

Met Ile Lys Phe Val Asn Lys Thr Met Ala Pro Glu Asp Val Phe Lys  
 1 5 10 15  
 Lys Val Val Ser His Cys Lys Glu Tyr Gly Phe Val Phe Pro Ser Ser  
 20 25 30  
 Asp Ile Tyr Asp Gly Leu Gly Ala Val Tyr Asp Tyr Gly Gln Met Gly  
 35 40 45  
 Val Glu Leu Lys Asn Asn Ile Lys Lys Tyr Trp Trp Asp Ser Met Val  
 50 55 60  
 Leu Leu His Glu Asn Ile Val Gly Ile Asp Ser Ala Ile Phe Met His  
 65 70 75 80  
 Pro Thr Ile Trp Lys Ala Ser Gly His Val Asp Ala Phe Asn Asp Pro  
 85 90 95  
 Leu Ile Asp Asn Lys Asp Ser Lys Lys Arg Tyr Arg Ala Asp Val Leu  
 100 105 110  
 Ile Glu Asp Gln Leu Ala Lys Tyr Asp Asp Lys Ile Asn Lys Glu Val  
 115 120 125  
 Ala Lys Ala Ala Lys Arg Phe Gly Glu Ala Phe Asp Glu Ala Gln Phe  
 130 135 140  
 Arg Ser Thr Asn Gly Arg Val Leu Glu His Gln Ala Lys Arg Asp Ala  
 145 150 155 160  
 Leu His Glu Arg Phe Ala Lys Ala Leu Asn Asp Asn Asn Leu Glu Glu  
 165 170 175  
 Leu Arg Gln Ile Ile Val Asp Glu Glu Ile Ala Cys Pro Ile Ser Gly  
 180 185 190  
 Thr Lys Asn Trp Thr Glu Val Arg Gln Phe Asn Leu Met Phe Ser Thr  
 195 200 205  
 Asp Met Gly Ser Thr Ala Asp Gly Ser Met Lys Ile Tyr Leu Arg Pro  
 210 215 220  
 Glu Thr Ala Gln Gly Ile Phe Val Asn Tyr Leu Asn Val Gln Thr Thr  
 225 230 235 240  
 Gly Arg Met Lys Val Pro Phe Gly Ile Ala Gln Ile Gly Lys Ala Phe  
 245 250 255  
 Arg Asn Glu Ile Val Ala Arg Gln Phe Ile Phe Arg Met Arg Glu Phe  
 260 265 270  
 Glu Gln Met Glu Met Gln Phe Phe Val Arg Pro Gly Ser Glu Leu Glu  
 275 280 285  
 Tyr Phe Lys Lys Trp Lys Glu Ile Arg Leu Lys Trp His Lys Ala Leu  
 290 295 300  
 Gly Phe Gly Asp Asp His Tyr Arg Phe His Asp His Asp Lys Leu Ala  
 305 310 315 320  
 His Tyr Ala Asn Ala Ala Thr Asp Ile Glu Phe Leu Met Pro Phe Gly  
 325 330 335  
 Phe Lys Glu Val Glu Gly Ile His Ser Arg Thr Asn Phe Asp Leu Ser  
 340 345 350  
 Gln His Glu Lys Phe Ser Gly Lys Ser Ile Lys Tyr Phe Asp Pro Glu  
 355 360 365  
 Leu Asn Glu Ser Tyr Thr Pro Tyr Val Ile Glu Thr Ser Ile Gly Val  
 370 375 380  
 Asp Arg Met Phe Leu Ser Ile Met Ser Ala Ala Tyr Cys Glu Glu Gln  
 385 390 395 400

Leu Glu Asn Gly Glu Ser Arg Val Val Leu Lys Leu Pro Ala Ala Leu  
 405 410 415  
 Ala Pro Val Lys Leu Ala Val Met Pro Leu Val Lys Lys Asp Gly Leu  
 420 425 430  
 Pro Glu Lys Ala Arg Glu Ile Ile Asp Asn Leu Lys Phe His Phe His  
 435 440 445  
 Cys Gln Tyr Asp Glu Lys Asp Ser Ile Gly Lys Arg Tyr Arg Arg Gln  
 450 455 460  
 Asp Ala Ile Gly Thr Pro Tyr Cys Val Thr Val Asp His Gln Thr Leu  
 465 470 475 480  
 Glu Asp Asn Cys Val Thr Leu Arg Asn Arg Asp Thr Met Glu Gln Glu  
 485 490 495  
 Arg Val Ala Ile Ser Glu Leu Asn Asn Ile Ile Ala Asp Arg Val Ser  
 500 505 510  
 Ile Thr Ser Leu Leu Lys Thr Ile Gln  
 515 520

<210> 8918  
 <211> 357  
 <212> PRT  
 <213> B.fragilis

<400> 8918

Thr Met Lys Phe Ile Tyr Ser Ile Leu Phe Ala Leu Leu Trp Ile Gly  
 1 5 10 15  
 Val Thr Ile Thr Phe Gly Ser Tyr Leu Tyr Arg Met Gly Leu Pro Ile  
 20 25 30  
 Val Asn Ala Ser Ala Gln Lys Leu Leu Leu Arg Thr Ile Asp Glu Asp  
 35 40 45  
 Leu Glu Cys Arg Phe Arg Lys Leu Lys Pro Asn Gln Ala Tyr Val Thr  
 50 55 60  
 Gly Lys Lys His Thr Lys Asn Lys Lys Val Thr Leu Thr Asp Lys Ser  
 65 70 75 80  
 Gly Thr His Asn Val Arg Gln Phe Ala Ile Asp Thr Val Tyr Thr Asp  
 85 90 95  
 Thr Ser Phe Val His Arg Val Lys Gln Ser Tyr Leu Ile Glu Arg Asn  
 100 105 110  
 Ser Ile Asn Val Asp Ser Leu Asn Gln Lys Trp Gln Leu Lys Leu Arg  
 115 120 125  
 Met Asp Gly Ile Cys Ala Asn Thr Gly Ile Lys Leu Thr Asn Ser Leu  
 130 135 140  
 Lys Asn Gly Glu Arg Ile Ser Ala Ser Ser Gly Leu Asn Glu Pro Asp  
 145 150 155 160  
 Cys Phe Leu Leu Ala Tyr Ser Thr Gly Val Gly Tyr Gly Ile Lys Met  
 165 170 175  
 Asp Ala Phe Ile Arg Pro Phe Trp Ala Thr Val Val Leu Lys Ala His  
 180 185 190  
 Trp Asn Asn Ile Trp Thr Trp Asn Tyr Val Leu Phe Ser Leu Ile Phe  
 195 200 205  
 Cys Leu Phe Tyr Val Pro Gly Val Arg Leu Phe Leu Val Gln Val Leu  
 210 215 220  
 Ser Lys Phe Arg Ile Val Asp Asn His Val Lys Ser Ser Gln Pro Leu  
 225 230 235 240  
 Val Gln Gln Lys Ser Glu Phe Val Trp Glu Val Asn Gly Leu Thr Phe  
 245 250 255  
 Asp Tyr Leu Gln Arg Ser Ile Thr Tyr His Asn Gln Thr Cys Ile Leu  
 260 265 270  
 Arg Lys Gln Val Val Glu Val Leu Leu Ala Phe Leu Lys Val Pro Gly  
 275 280 285



His Leu Leu Leu Asn Glu Asp Leu Lys Lys Leu Phe Trp Lys Glu Leu  
 290 295 300  
 Glu Asp Val Asp Ser Cys Met Glu Arg Arg Asn Arg Leu Ile Thr Asp  
 305 310 315 320  
 Leu Arg Thr Asp Leu Arg Lys Ile Gly Ala Asn Leu Gly Val Thr Leu  
 325 330 335  
 Val Asn Gly Gly Tyr Gln Leu His Phe Arg Ser Glu Asn Ser Lys Lys  
 340 345 350  
 Ser Val Lys Asn Gln  
 355

<210> 8919  
 <211> 196  
 <212> PRT  
 <213> B.fragilis

<400> 8919  
 Leu Leu Ser Ser Pro Arg Glu Ala Ser Ala Glu Ala Lys Arg Lys Trp  
 1 5 10 15  
 Ile Asn Ser Ile Arg Glu Val Ser Thr Trp Val Ser Arg Arg Glu Val  
 20 25 30  
 Tyr Gln Ala Leu Gly Arg Phe Ser Asn Met Arg Phe Gly Glu His Ile  
 35 40 45  
 Asp Phe Ser Ile Arg Ile Ser Lys Gly Gly Tyr Gln Cys Arg Leu Phe  
 50 55 60  
 Pro Asp Ala Trp Val Tyr His Lys Arg Arg Thr Asp Phe Lys Lys Phe  
 65 70 75 80  
 Phe Lys Gln Val His Asn Ser Gly Ile Ala Arg Ile Asn Leu Tyr Lys  
 85 90 95  
 Lys Tyr Pro Glu Ser Leu Lys Val Val His Leu Leu Pro Val Val Phe  
 100 105 110  
 Thr Ser Gly Val Ala Leu Leu Leu Leu Cys Thr Pro Phe Cys Leu Phe  
 115 120 125  
 Asn Leu Val Pro Ile Leu Leu Tyr Ala Leu Leu Val Cys Leu Asp Ser  
 130 135 140  
 Ala Leu Gln Asn Lys Ser Leu Arg Ile Gly Ile Tyr Ser Ile Ala Ala  
 145 150 155 160  
 Ser Phe Ile Gln Leu Ile Gly Tyr Gly Thr Gly Phe Trp Arg Ala Trp  
 165 170 175  
 Trp Glu Arg Cys Ile Leu Gly Arg Asn Glu Phe Glu Ala Phe Arg Lys  
 180 185 190  
 Asn Phe Tyr Lys  
 195

<210> 8920  
 <211> 260  
 <212> PRT  
 <213> B.fragilis

<400> 8920  
 Thr Ile His Ser Tyr Ser Met Lys Asn Val Tyr Phe Leu Ser Asp Ala  
 1 5 10 15  
 His Leu Gly Ser Arg Ala Ile Glu His Gly Arg Thr Gln Glu Arg Arg  
 20 25 30  
 Leu Val Asn Phe Leu Asp Ser Ile Lys His Lys Ala Ala Val Tyr  
 35 40 45  
 Leu Leu Gly Asp Met Phe Asp Phe Trp Tyr Glu Phe Arg Leu Val Val  
 50 55 60  
 Pro Lys Gly Tyr Thr Arg Phe Leu Gly Lys Leu Ser Glu Leu Thr Asp

65					70					75				80
Met	Gly	Val	Glu	Val	His	Phe	Phe	Thr	Gly	Asn	His	Asp	Ile	Trp
				85					90				95	
Gly	Asp	Tyr	Leu	Thr	Lys	Glu	Cys	Gly	Val	Thr	Ile	His	Arg	Glu
			100					105					110	
Val	Thr	Thr	Glu	Ile	Tyr	Gly	Lys	Glu	Phe	Tyr	Leu	Ala	His	Gly
		115				120						125		
Gly	Leu	Gly	Asp	Pro	Asp	Lys	Lys	Phe	Lys	Leu	Leu	Arg	Thr	Met
	130					135					140			
His	Ser	Arg	Thr	Leu	Gln	Thr	Leu	Phe	Ser	Ala	Ile	His	Pro	Arg
145					150					155				160
Ser	Ile	Asp	Leu	Gly	Leu	Asn	Trp	Ala	Lys	His	Ser	Arg	Leu	Lys
			165						170					175
Glu	Gly	Gly	Lys	Glu	Pro	Asp	Tyr	Met	Gly	Glu	Asn	Lys	Glu	Phe
		180					185						190	
Val	Leu	Tyr	Thr	Lys	Glu	Tyr	Leu	Lys	Ser	His	Pro	Asn	Ile	Asn
	195						200					205		
Phe	Ile	Tyr	Gly	His	Arg	His	Ile	Glu	Leu	Asp	Leu	Met	Leu	Ser
	210					215					220			
Thr	Ala	Arg	Ile	Leu	Ile	Leu	Gly	Asp	Trp	Ile	Asn	Phe	Phe	Ser
225					230					235				240
Ala	Val	Phe	Asp	Gly	Glu	Asn	Leu	Phe	Leu	Glu	Asn	Tyr	Ile	Glu
			245						250					255
Glu	Thr	Gln	Leu											
			260											

<210> 8921  
 <211> 123  
 <212> PRT  
 <213> B.fragilis

<400> 8921

Ala	Met	His	Ser	Cys	Leu	Ile	Cys	Ile	Gly	Ser	Asn	Tyr	Asn	Arg	Lys
1				5					10					15	
Glu	Asn	Leu	Leu	Leu	Ala	Arg	Arg	Arg	Leu	Thr	Ala	Leu	Phe	Pro	Ser
		20						25					30		
Ile	Arg	Phe	Thr	Gly	Glu	Gln	Glu	Thr	Arg	Pro	Leu	Phe	Phe	Arg	Asn
	35						40					45			
Pro	Ala	Leu	Phe	Ser	Asn	Gln	Met	Ala	Arg	Phe	Tyr	Thr	Asp	Ala	Asp
	50					55					60				
Ala	Glu	Arg	Val	Val	Lys	Glu	Leu	Lys	Thr	Ile	Glu	Arg	Glu	Ala	Gly
65					70					75					80
Arg	Glu	Gln	Glu	Asp	Lys	Lys	Lys	Glu	Lys	Val	Cys	Leu	Asp	Ile	Asp
			85						90					95	
Leu	Leu	Val	Phe	Asp	Asp	Arg	Ile	Leu	Arg	Pro	Glu	Asp	Leu	Gln	Arg
		100						105					110		
Glu	Tyr	Val	Arg	Lys	Gly	Leu	Glu	Glu	Leu	Lys					
		115					120								

<210> 8922  
 <211> 336  
 <212> PRT  
 <213> B.fragilis

<400> 8922

Gly	Phe	Ser	Ser	Gly	Leu	Val	Ala	Arg	Leu	Tyr	Ala	Cys	Leu	Leu	Arg
1				5					10					15	
Thr	Thr	Gln	Leu	Ile	Cys	Pro	Met	Lys	Arg	Pro	Thr	Ile	Pro	Leu	Met
		20						25					30		

Leu Leu Ile Ala Ala Ser Ile Phe Val Phe Phe Leu Leu Asn Leu Leu  
 35 40 45  
 Leu Gly Ser Val Ser Ile Pro Ile Gly Ser Val Trp Asn Ile Leu Trp  
 50 55 60  
 Gly Gly Thr Asp Glu Ser Val Ile Trp Gln Asn Ile Ile Trp Lys Ser  
 65 70 75 80  
 Arg Val Pro Gln Ala Leu Thr Ala Leu Val Ala Gly Ala Gly Leu Ser  
 85 90 95  
 Ile Ser Gly Leu Gln Met Gln Thr Ile Phe Arg Asn Pro Leu Ala Gly  
 100 105 110  
 Pro Ser Val Leu Gly Ile Ser Ser Gly Ala Ser Leu Gly Val Ala Phe  
 115 120 125  
 Val Val Leu Leu Ser Gly Ala Phe Gly Gly Val Ala Leu Ser Lys Leu  
 130 135 140  
 Gly Tyr Met Gly Glu Val Ala Leu Ser Leu Ala Ala Val Ile Gly Ala  
 145 150 155 160  
 Leu Ser Val Met Ala Leu Ile Val Tyr Val Ser Gln Lys Val Lys Gly  
 165 170 175  
 Asn Val Thr Leu Leu Ile Ile Gly Val Met Ile Gly Tyr Val Ala Ser  
 180 185 190  
 Ala Val Ile Gly Val Leu Lys Tyr Phe Ser Val Glu Glu Asp Ile Arg  
 195 200 205  
 Ala Tyr Val Ile Trp Gly Leu Gly Ser Phe Ala Arg Val Ser Gly Asp  
 210 215 220  
 Gln Met Thr Leu Phe Val Cys Ile Met Val Val Leu Ile Pro Leu Ser  
 225 230 235 240  
 Phe Leu Leu Ile Lys Thr Met Asn Leu Met Leu Leu Gly Asp Gly Tyr  
 245 250 255  
 Ala Arg Asn Leu Gly Leu Asn Ile Arg Arg Ala Arg Leu Val Gly His  
 260 265 270  
 Phe Met Phe Gly Ser Ala Cys Ser His Arg Asp Arg Leu Leu Arg Thr  
 275 280 285  
 Asp Tyr Val His Trp Phe Gly Gly Ser Ser Ser Leu Pro Cys His Leu  
 290 295 300  
 Ser Tyr Leu Gly Ser Pro His Pro Asp Ala Gly His Phe Ala Gly Arg  
 305 310 315 320  
 Cys Phe Val Gly Phe Gly Met Gln Ser Gly Cys Pro His Ala Gly Leu  
 325 330 335

<210> 8923  
 <211> 70  
 <212> PRT  
 <213> B.fragilis

<400> 8923  
 Leu Ala Thr Pro Ser Ala Val Arg Thr Thr Lys Asn Val Leu Ser Ala  
 1 5 10 15  
 Gly Phe Gly Leu Thr Met Ile Ser Lys Ser Ala Ala Thr Val Gly Gly  
 20 25 30  
 Phe Phe Leu Ala Asp Met Met Leu Val Gly Val Asn Thr Pro Leu Thr  
 35 40 45  
 Leu Ile Lys Val Ala Ala Ser Thr Leu Asp Val Pro Glu Ile Tyr Trp  
 50 55 60  
 Asn Ala Phe Ser Val Ala  
 65 70

<210> 8924  
 <211> 350  
 <212> PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8924

Cys Asn Ala Pro Ser Ser Lys Gly Leu Phe Val Ser Ile Gly Ala Thr  
 1 5 10 15  
 Lys Val Thr Asp Tyr Leu Phe Thr Asp Lys Asn Ile Lys Thr Met Ile  
 20 25 30  
 Met Arg Asn Ile Asn Thr Asp Leu Ile Asp Ala Met Lys Ile Tyr Leu  
 35 40 45  
 Pro Lys Gly Asn Asn Leu Ala Asn Ala Leu Met Asp Ile Leu Tyr Leu  
 50 55 60  
 Gly Lys Glu Ala Thr Tyr Arg Arg Leu Arg Gly Glu Val Pro Phe Thr  
 65 70 75 80  
 Phe Ala Glu Val Ala Thr Ile Ser Gln His Met Gly Ile Ser Leu Asp  
 85 90 95  
 Lys Ile Val Gly Ala Asp Leu Asn Asp Asn Ala Ile Val Asn Leu Asn  
 100 105 110  
 Met Leu Gln Cys Gln Arg Pro Ala Glu Thr Tyr Tyr Ser Ile Ile Asp  
 115 120 125  
 Ser Tyr Ile Lys Leu Phe Gly Gln Leu Ile Glu Arg Glu Ser Ser Glu  
 130 135 140  
 Arg Ser Thr Ser Ser Asn Thr Val Pro Gln Thr Leu Tyr Leu Lys Tyr  
 145 150 155 160  
 Glu Ala Leu Ser Lys Phe Gln Leu Phe Lys Trp Ile Tyr Gln His Glu  
 165 170 175  
 Ser Thr Tyr Ala Gly Arg His Tyr Glu Asp Leu Glu Ile Pro Glu Lys  
 180 185 190  
 Leu Ile Asp Lys Gln Lys Glu Phe Val Asn Leu Ser Gln Leu Phe Gln  
 195 200 205  
 Ser Thr Asn Tyr Ile Trp Asp Lys Glu Ile Phe Ile Arg Leu Val Asn  
 210 215 220  
 Glu Val Lys Phe Phe Leu Asn Ile Asn Leu Ile Ser Glu Asp Ser Val  
 225 230 235 240  
 Lys Arg Ile Lys Lys Glu Leu Leu Ile Leu Leu Asn Glu Leu Glu Lys  
 245 250 255  
 Ile Ser Ala Gln Gly Lys Tyr Ser Ser Gly Lys Asp Val Lys Ile Tyr  
 260 265 270  
 Ile Ser Asp Ile Asn Phe Glu Ser Thr Tyr Ser Tyr Val Glu Thr Asp  
 275 280 285  
 Ile Tyr His Gln Cys Leu Ile Gly Val Phe Ser Ile Asn Ser Ile Thr  
 290 295 300  
 Ser Lys Asp Asp Phe Leu Phe Gln His Leu Lys Leu Trp Ile Gln Ser  
 305 310 315 320  
 Leu Lys Lys Tyr Ser Thr Leu Ile Ser Gln Ser Gly Glu Val Gln Arg  
 325 330 335  
 Ile His Phe Phe Asn Arg Gln Gln Glu Leu Val Lys Ser Leu  
 340 345 350

&lt;210&gt; 8925

&lt;211&gt; 69

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8925

Ala Thr Glu Pro Ser Phe Ile Ala Ser Ala Lys Val Val Leu Phe Leu  
 1 5 10 15  
 Lys Ser Pro Lys Lys Ser Val Ser Phe Thr Tyr Ile Phe Thr Tyr  
 20 25 30  
 Ile Phe Tyr Asn Pro Lys Gly Lys Leu Val Lys Tyr Gln Ile Lys Ser

35 40 45  
 Asn Ile Val Gln Pro Ile Ser Ile Tyr Thr Glu Tyr Arg Gln Val Tyr  
 50 55 60  
 Phe Lys Ser Glu Pro  
 65

<210> 8926  
 <211> 199  
 <212> PRT  
 <213> B.fragilis

<400> 8926  
 Asn Arg Glu Pro Val Val Phe Gln Leu Gln Gly Gln Asp Lys Leu Leu  
 1 5 10 15  
 Arg Gln Ala Ala Phe Asp Leu Leu Ile Leu Asp Ile Ile Met Pro Lys  
 20 25 30  
 Met Ile Gly Leu Glu Leu Cys Arg Leu Tyr Arg His Gln Tyr Gly Tyr  
 35 40 45  
 Leu Thr Pro Val Ile Met Leu Thr Ala Leu Gly Thr Thr Glu Asp Ile  
 50 55 60  
 Val Lys Gly Leu Asp Ser Gly Ala Asp Asp Tyr Leu Val Lys Pro Phe  
 65 70 75 80  
 Ser Phe Gln Glu Leu Glu Ala Arg Ile Lys Ala Ile Leu Arg Arg Gly  
 85 90 95  
 Arg Glu Asp Ser Val Gln Gln Leu Val Cys Asp Asp Leu Val Leu Asn  
 100 105 110  
 Cys Asn Thr Arg Arg Ala Arg Arg Lys Glu Val Glu Ile Glu Leu Thr  
 115 120 125  
 Val Lys Glu Tyr Arg Leu Leu Glu Tyr Phe Met Thr His Gln Gly Met  
 130 135 140  
 Val Leu Ser Arg Leu Thr Leu Leu Lys Asp Val Trp Asp Lys Asn Phe  
 145 150 155 160  
 Asp Thr Asn Thr Asn Val Val Asp Val Tyr Val Asn Tyr Leu Arg Gly  
 165 170 175  
 Lys Ile Asp Lys Glu His Asp Lys Lys Leu Ile His Thr Val Val Gly  
 180 185 190  
 Ser Gly Tyr Ile Met Tyr Ala  
 195

<210> 8927  
 <211> 90  
 <212> PRT  
 <213> B.fragilis

<400> 8927  
 Arg Asn Lys Phe Leu Ser Glu Val Ile Glu Ile Leu Pro Gly Leu Phe  
 1 5 10 15  
 Lys Ile Ile Leu Pro Glu Ser Val Pro Gln Gly Leu Ser Leu Phe Leu  
 20 25 30  
 Lys Glu Ser Thr Ile Gln Pro Ile Asp Pro His Ala Gly Asn Leu Ala  
 35 40 45  
 Ser Asn Gln Gln Met Cys Leu Asn Ile Gly Arg Lys Glu Cys Phe Cys  
 50 55 60  
 Ser Arg Ser Leu Ser Ser Glu Arg Phe Ser Ile Thr Cys Asn Phe Tyr  
 65 70 75 80  
 Arg Leu Ser Leu Tyr Asp Val Pro Leu Cys  
 85 90

<210> 8928

<211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 8928

Thr	Thr	Thr	Thr	Arg	Phe	Glu	Ile	Gly	Asn	Tyr	Leu	Phe	Asp	Ser	Leu
1				5					10					15	
Ala	Gln	Thr	Leu	Thr	His	Ala	Gly	Leu	Lys	His	Glu	Leu	Ser	His	Arg
			20					25					30		
Glu	Ser	Glu	Ile	Leu	Arg	Ala	Thr	Leu	Arg	Lys	Ser	Glu	Ser	Ser	Gly
		35					40					45			
Gln	His	Thr	Glu	Cys	Ile	Thr	Arg	Pro	Met	Gly	Arg				
	50					55					60				

<210> 8929  
 <211> 236  
 <212> PRT  
 <213> B.fragilis

<400> 8929

Gln	Met	Ile	Thr	Thr	His	Pro	Ile	Arg	Phe	Val	Ser	Leu	Gly	Pro	Gly
1				5					10					15	
Glu	Pro	Asp	Leu	Ile	Thr	Leu	Lys	Gly	Leu	Lys	Ala	Leu	Gln	Gly	Ala
			20					25					30		
Asp	Cys	Ile	Phe	Cys	Pro	Ala	Thr	Met	Thr	Gln	Asp	Gly	Lys	Ser	Ser
		35					40					45			
Ser	Arg	Ala	Leu	Ser	Ile	Leu	Asn	Thr	Leu	Gly	Phe	Ser	Asp	Thr	Val
		50				55					60				
Gln	Cys	Phe	Arg	Leu	Pro	Met	Asp	Lys	Asp	Arg	Thr	Leu	Ala	Leu	Arg
65					70				75					80	
Ser	Tyr	Glu	Ala	Val	Tyr	Glu	Ser	Ser	Lys	Ile	Leu	Arg	Ala	Glu	Gly
				85					90					95	
Gln	Asn	Val	Val	Ile	Val	Ala	Glu	Gly	Asp	Ala	Gly	Leu	Tyr	Ser	Ser
			100					105					110		
Ile	His	Tyr	Ile	Tyr	Asp	Lys	Leu	Gln	Gln	Asp	Asp	Ile	Pro	Val	Glu
		115					120					125			
Gln	Ile	Ala	Gly	Ile	Pro	Ala	Phe	Ile	Ala	Ser	Gly	Ala	Met	Ala	Gly
	130					135					140				
Leu	His	Ile	Val	Ser	Gln	Glu	Glu	Arg	Leu	Ile	Val	Ile	Pro	Gly	His
145					150				155					160	
Val	Thr	Ala	Lys	Glu	Leu	Asp	Asp	Tyr	Leu	Lys	His	Gln	Thr	Val	Val
				165					170					175	
Val	Ile	Met	Lys	Leu	Ser	Gln	Cys	Ile	Asp	Glu	Val	His	Gln	Cys	Ile
			180					185					190		
Ile	Asn	His	Pro	Glu	Tyr	Gln	Tyr	His	Tyr	Phe	Glu	Asn	Val	Gly	Thr
		195					200					205			
Glu	Lys	Glu	Tyr	Tyr	Ser	Cys	Ser	Thr	Glu	Glu	Leu	Arg	Glu	Lys	Arg
	210					215					220				
Tyr	Pro	Tyr	Phe	Ser	Val	Met	Ile	Ile	Arg	Phe	Gly				
225					230						235				

<210> 8930  
 <211> 60  
 <212> PRT  
 <213> B.fragilis

<400> 8930

Arg	Gly	Val	Thr	Leu	Ser	Glu	Ser	Asp	Asn	His	Tyr	Arg	Glu	Ile	Arg
1				5					10					15	

Ile	Ser	Phe	Phe	Pro	Lys	Phe	Phe	Gly	Gly	Ala	Arg	Val	Val	Phe	Leu
		20						25					30		
Leu	Gly	Pro	Tyr	Ile	Phe	Lys	Val	Val	Val	Leu	Val	Phe	Arg	Met	Val
		35					40					45			
Asn	Tyr	Thr	Leu	Val	Tyr	Leu	Val	Tyr	Thr	Leu	Arg				
	50					55					60				

&lt;210&gt; 8931

&lt;211&gt; 492

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8931

Leu	Ile	Trp	Thr	Ile	Trp	Lys	Gln	Met	Lys	Ser	Lys	Trp	Arg	Met	Pro
1				5					10					15	
His	Pro	Ala	Thr	Met	Phe	Phe	Leu	Phe	Thr	Leu	Ala	Val	Ile	Phe	Leu
			20					25					30		
Ser	Trp	Ile	Phe	Asp	Ile	Tyr	Gly	Leu	Arg	Val	Gln	Leu	Pro	Gln	Thr
		35					40					45			
Gly	Ala	Glu	Ile	Arg	Val	Gln	Ser	Leu	Leu	Ser	Pro	Glu	Gly	Ile	Arg
	50					55				60					
Trp	Met	Leu	Arg	Asn	Ala	Ile	Thr	Asn	Phe	Thr	Gly	Phe	Ala	Pro	Leu
65					70					75					80
Gly	Met	Val	Leu	Ile	Ala	Met	Phe	Gly	Ile	Gly	Val	Ala	Gln	His	Ser
				85					90					95	
Gly	Phe	Ile	Asp	Ala	Cys	Val	Arg	Gln	Gly	Val	Lys	Asn	Arg	Lys	Asn
			100					105					110		
Thr	Arg	Arg	Ile	Ile	Leu	Trp	Val	Ile	Ile	Leu	Gly	Leu	Leu	Ser	Asn
			115					120					125		
Ile	Val	Gly	Asp	Ala	Gly	Tyr	Ile	Ile	Leu	Leu	Pro	Ile	Ala	Ala	Thr
	130					135					140				
Leu	Phe	Tyr	Ser	Val	Gly	Leu	Asn	Pro	Val	Ala	Gly	Ile	Ile	Thr	Ala
145					150					155					160
Tyr	Val	Ser	Val	Ser	Cys	Gly	Tyr	Ser	Ala	Asn	Val	Val	Leu	Ser	Thr
				165					170					175	
Met	Asp	Pro	Leu	Ile	Ala	Arg	Thr	Thr	Gln	Glu	Ala	Ala	Ile	Asp	Ser
			180					185					190		
Gly	Val	Tyr	Gln	Gly	Asn	Thr	Gly	Pro	Leu	Cys	Asn	Tyr	Tyr	Phe	Met
		195					200					205			
Ser	Val	Ser	Thr	Phe	Val	Ile	Gly	Ala	Ile	Ile	Tyr	Arg	Ile	Thr	Cys
						215					220				
Lys	Arg	Leu	Ile	Pro	Ser	Leu	Gly	Gln	Tyr	Glu	Gly	Lys	Gln	Ile	Phe
225					230					235					240
Glu	Gly	Tyr	Lys	Gln	Leu	Ser	Arg	Lys	Glu	Arg	Arg	Ala	Met	Thr	Met
				245					250					255	
Ala	Ile	Val	Val	Gly	Met	Leu	Tyr	Ala	Ala	Ile	Ile	Leu	Trp	Ala	Thr
			260					265						270	
Phe	Ser	Ser	Trp	Gly	Ile	Leu	Arg	Gly	Val	Asn	Gly	Gly	Leu	Ile	Arg
		275					280					285			
Ser	Pro	Phe	Ile	Met	Gly	Ile	Leu	Phe	Leu	Leu	Ser	Leu	Gly	Ala	Ala
	290					295					300				
Ile	Met	Gly	Met	Val	Tyr	Gly	Phe	Ser	Ser	Gly	Arg	Tyr	Arg	Ser	Asp
305					310					315					320
Asn	Asp	Val	Ile	Glu	Gly	Leu	Ala	Gln	Pro	Met	Lys	Leu	Leu	Gly	Gly
				325					330					335	
Tyr	Leu	Val	Ile	Ala	Phe	Phe	Ala	Ala	Gln	Met	Phe	Ala	Cys	Leu	Glu
			340					345					350		
Tyr	Ser	His	Leu	Asp	Lys	Cys	Val	Ala	Ile	Ile	Gly	Ala	Asn	Leu	Leu
		355					360						365		

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Ser Ser Val Gln Ala Gly Pro Leu Trp Thr Leu Ile Leu Phe Ile Leu  
 370 375 380  
 Phe Thr Ala Thr Ile Asn Leu Ile Met Val Ser Ala Thr Ala Lys Trp  
 385 390 395 400  
 Ala Phe Met Ala Phe Ile Phe Val Pro Val Phe Ala Arg Met Gly Ile  
 405 410 415  
 Glu Pro Asp Met Thr Gln Cys Ala Phe Arg Ile Gly Asp Ser Ala Thr  
 420 425 430  
 Asn Ala Ile Thr Pro Phe Met Phe Tyr Met Pro Leu Val Leu Thr Tyr  
 435 440 445  
 Met Gln Gln Tyr Asp Lys Gln Ala Thr Tyr Gly Ser Leu Leu Lys Tyr  
 450 455 460  
 Thr Trp Arg Tyr Ser Val Tyr Ile Leu Ile Gly Trp Thr Met Leu Leu  
 465 470 475 480  
 Phe Ile Trp Tyr Leu Thr Ser Leu Pro Leu Gly Leu  
 485 490

<210> 8932  
 <211> 240  
 <212> PRT  
 <213> B.fragilis

<400> 8932  
 Ile Arg Met Ala Ser His Cys Val Gly Tyr Phe Lys Tyr Leu Gly Gln  
 1 5 10 15  
 His Val Gly Phe Phe Ser Arg Ile Thr Pro Val Phe Gln Glu Arg Arg  
 20 25 30  
 Lys Val Met Lys Ser Ser Leu Ile Val Val Ala Phe Phe Cys Ile Gly  
 35 40 45  
 Cys Leu Val Gly Ile Phe Asn Asp Phe Gln Phe Asp Met His Asn Leu  
 50 55 60  
 Ser Met Tyr Ile Leu Tyr Ala Leu Met Leu Gln Val Gly Ile Ser Ile  
 65 70 75 80  
 Gly Ser Asn Lys Asn Leu Lys Phe Leu Ile Lys Ser Leu Arg Pro Asn  
 85 90 95  
 Met Leu Leu Val Pro Ile Ala Thr Ile Val Gly Thr Leu Leu Phe Ser  
 100 105 110  
 Ala Phe Ala Ser Leu Leu Leu Ser Gln Trp Ser Val Phe Asp Cys Met  
 115 120 125  
 Ala Val Gly Ser Gly Phe Ala Tyr Tyr Ser Leu Ser Ser Ile Leu Ile  
 130 135 140  
 Thr Gln Phe Lys Glu Ala Ser Val Gly Leu Gln Leu Ala Thr Glu Leu  
 145 150 155 160  
 Gly Thr Ile Ala Leu Leu Ala Asn Ile Phe Arg Glu Met Met Ala Leu  
 165 170 175  
 Leu Gly Thr Pro Leu Ile Arg Lys Tyr Phe Gly Lys Leu Ala Pro Ile  
 180 185 190  
 Ser Ala Ala Gly Val Asn Ser Met Asp Val Leu Leu Pro Ser Ile Thr  
 195 200 205  
 His Tyr Ser Gly Lys Asp Met Ile Pro Val Ala Ile Phe His Gly Ile  
 210 215 220  
 Leu Ile Asp Met Ser Val Pro Phe Phe Val Ser Leu Phe Cys Ser Leu  
 225 230 235 240

<210> 8933  
 <211> 73  
 <212> PRT  
 <213> B.fragilis



&lt;400&gt; 8933

Val Met Val Ala Gly Gln Lys Met Gln Ser Ala Pro Cys Ser Ala Leu  
 1 5 10 15  
 Ser Pro Phe Asn Val Ile Arg Ser Gly Ser Pro Gly Pro Lys Asp Thr  
 20 25 30  
 Lys Arg Met Gly Cys Val Val Ile Ile Cys Tyr Arg Phe Ile Ile Leu  
 35 40 45  
 Met Phe Cys Lys Ser Glu Glu Asn Ile Ser Met Lys Gln Glu Leu Leu  
 50 55 60  
 Ser Ile Phe Asp Arg Cys Asn Leu Asn  
 65 70

&lt;210&gt; 8934

&lt;211&gt; 163

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8934

Glu Ser Leu Tyr Lys Ile Phe Tyr Lys Ile Met Ser Glu Asn Lys Gln  
 1 5 10 15  
 Ala Leu Gln Val Ala Ala Leu Lys Asn Gly Thr Val Ile Asp His Ile  
 20 25 30  
 Pro Ser Glu Lys Leu Phe Thr Val Val Ser Leu Leu Gly Leu Glu His  
 35 40 45  
 Met Thr Thr Asn Ile Thr Ile Gly Phe Asn Leu Asp Ser Lys Lys Leu  
 50 55 60  
 Gly Lys Lys Gly Ile Ile Lys Ile Ala Asp Lys Phe Phe Cys Asp Glu  
 65 70 75 80  
 Glu Ile Asn Arg Ile Ser Val Val Ala Pro His Val Lys Leu Asn Ile  
 85 90 95  
 Ile Arg Asp Tyr Glu Val Val Glu Lys Lys Glu Val Arg Met Pro Asp  
 100 105 110  
 Glu Leu Lys Ala Ile Val Lys Cys Ala Asn Pro Lys Cys Ile Thr Asn  
 115 120 125  
 Asn Glu Pro Met Ala Thr Leu Phe His Val Ile Asp Lys Asp Asn Cys  
 130 135 140  
 Val Ile Lys Cys His Tyr Cys Glu Lys Glu Gln Lys Arg Glu Asp Ile  
 145 150 155 160  
 Thr Ile Ile

&lt;210&gt; 8935

&lt;211&gt; 198

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8935

Leu Val Thr Tyr Lys Val Asn Lys Lys Met Lys Gln Asp Trp Lys Pro  
 1 5 10 15  
 Gly Thr Leu Ile Tyr Pro Leu Pro Ala Val Leu Val Ser Cys Gly Ser  
 20 25 30  
 Asp Glu Ser Glu Tyr Asn Ile Leu Thr Val Ala Trp Thr Gly Thr Ile  
 35 40 45  
 Cys Thr Asn Pro Pro Met Cys Tyr Ile Ser Val Arg Pro Glu Arg His  
 50 55 60  
 Ser Tyr Pro Ile Ile Lys Lys Asn Met Glu Phe Val Ile Asn Leu Thr  
 65 70 75 80  
 Thr Arg Asp Met Ala Phe Ala Thr Asp Trp Cys Gly Val Arg Ser Gly  
 85 90 95

Lys Asp Tyr His Lys Phe Glu Glu Met Lys Leu Thr Pro Gly Lys Cys  
 100 105 110  
 Ser Val Val Asp Ala Pro Leu Ile Glu Glu Ser Pro Leu Cys Ile Glu  
 115 120 125  
 Cys Arg Val Lys Glu Ile Val Ser Leu Gly Ser His Asp Met Phe Ile  
 130 135 140  
 Ser Asp Val Val Asn Ile Arg Ala Asp Asp Arg His Leu Asn Arg Glu  
 145 150 155 160  
 Thr Gly Lys Leu Glu Leu Ala Glu Ala Asn Pro Leu Val Tyr Val His  
 165 170 175  
 Gly Gly Tyr Tyr Asn Leu Gly Glu Lys Ile Gly Lys Phe Gly Trp Ser  
 180 185 190  
 Val Glu Lys Lys Thr Lys  
 195

<210> 8936  
 <211> 682  
 <212> PRT  
 <213> B.fragilis

<400> 8936  
 Lys Lys Ala Tyr Ile Cys Tyr Leu Gln Thr Thr Asn Asn Met Met Arg  
 1 5 10 15  
 Tyr Ile Ile Leu Leu Val Leu Cys Ala Trp Thr Gly Ile Ala Leu Ala  
 20 25 30  
 Ile Asp Tyr His Ala Lys Asp Ser Leu Leu Leu Gln Leu Lys Gln Thr  
 35 40 45  
 Thr Ile Ala Ala Glu Arg Ile Asn Ile Tyr Arg Asn Leu Ala Asp Ile  
 50 55 60  
 Cys Phe Glu Thr Pro Asp Glu Lys Thr Tyr Leu Leu Asn Met Tyr Arg  
 65 70 75 80  
 Glu Ala Gln Lys Ala Gly Asp Thr Ser Gly Met Leu Asn Ala Leu Asn  
 85 90 95  
 Asp Leu Val Cys Gly Glu Thr Lys Glu Tyr Arg Met Asp Ser Ala Tyr  
 100 105 110  
 His Tyr Met Glu Leu Ile Lys Ala Ile Arg Glu Pro Gln Glu Thr Ala  
 115 120 125  
 Pro Val Leu Ala Tyr Leu Gln Met Arg Phe Phe Asp Thr Leu Cys Ser  
 130 135 140  
 His Asn Glu Thr Glu Glu Ala Ile Thr Lys Glu Leu Gln Phe Ile Glu  
 145 150 155 160  
 Glu Lys Lys Ser Asp Glu Ala Ser Leu Tyr Ser Lys Ile Ala Gln Ala  
 165 170 175  
 Tyr Ile Thr Gly Gly Ser Leu His Tyr Asn Asp Met Ile Lys Glu Ala  
 180 185 190  
 Leu Pro Tyr Leu Glu Thr Ala Met Asn Leu Ser Lys Gln Leu Pro Pro  
 195 200 205  
 Glu Lys Gln Ile Leu Phe Val Ser Ile Ile Val Trp Lys Leu Ser Asn  
 210 215 220  
 Thr Tyr Ser Met Leu Asn Lys Cys Asp Ser Ala Ile Arg Ile Leu Asp  
 225 230 235 240  
 Glu Asn Leu Gln Thr Gln Gln Gln Tyr Tyr Lys Asp His Tyr Gln Thr  
 245 250 255  
 Gln Arg Pro Phe Tyr Asn Met Ala Ile His Glu Leu Arg Phe Tyr Thr  
 260 265 270  
 Ser Leu Leu Thr Asn Ala Ile Ser Glu Ala Pro Glu Lys Met Asp Tyr  
 275 280 285  
 Tyr Trp Gln Gln Ile Val Lys Leu Asn Lys Lys Leu Thr Asn Pro Tyr  
 290 295 300

Asp	Arg	Tyr	Asn	Tyr	Phe	Leu	Ser	Met	Asp	Asn	Tyr	Tyr	Leu	Asn	Gln
305					310					315					320
Lys	Pro	Gln	Pro	His	Tyr	Glu	Lys	Ala	Leu	Val	Ala	Asn	Asp	Ser	Leu
				325					330					335	
Ile	Gln	Ile	Ala	Gln	Glu	Ile	Ile	Pro	Asn	Asn	Leu	Pro	Gly	Leu	Tyr
			340					345					350		
Asp	Ile	Gln	Ser	Gln	Thr	Tyr	Glu	Ala	Met	Gly	Asn	Phe	Lys	Glu	Ala
		355					360					365			
Leu	Ala	Tyr	Leu	Arg	Ile	Ala	Thr	Gln	Tyr	Lys	Asp	Ser	Leu	Thr	Thr
	370					375					380				
Glu	Asn	Met	Gln	Lys	Gln	Leu	Gly	Glu	Leu	Gln	Ile	Lys	Tyr	Glu	Val
385					390					395					400
Asn	Lys	Leu	Asn	Asn	Glu	Lys	Ser	Gln	Leu	Glu	Ile	Lys	Asn	Lys	Arg
			405						410					415	
Ile	Leu	Val	Ile	Cys	Leu	Ser	Ile	Ile	Leu	Ile	Ile	Val	Ile	Phe	Val
			420					425					430		
Cys	Leu	Tyr	Leu	Tyr	His	Asp	Leu	Lys	Lys	Glu	Lys	Lys	Met	Lys	Phe
	435						440					445			
His	Leu	Arg	Asn	Leu	Lys	Gln	Lys	Ala	Glu	Glu	Ser	Glu	Lys	Met	Lys
	450					455					460				
Thr	Ala	Phe	Ile	Asn	Ser	Ile	Cys	His	Glu	Ile	Arg	Thr	Pro	Leu	Asn
465					470						475				480
Ser	Ile	Val	Gly	Phe	Ser	Asp	Leu	Ile	Phe	Asn	Asp	Glu	Ile	Asp	Lys
			485						490					495	
Glu	Thr	Arg	Glu	Gly	Phe	Ser	Gln	Glu	Ile	Gln	Lys	Ser	Thr	Ile	Leu
			500					505					510		
Leu	Thr	Ser	Leu	Ile	Asp	Asn	Met	Leu	Glu	Ile	Ser	Ser	Leu	Asp	Val
		515					520					525			
Ser	Gln	Glu	Lys	Leu	Pro	Cys	Lys	Glu	Ala	Asn	Leu	Asn	Ser	Ile	Cys
	530					535					540				
Ile	Gln	Glu	Met	Thr	Leu	Leu	Asn	Arg	Ser	His	Lys	Pro	Asp	Ile	Asp
545					550					555					560
Tyr	Arg	Thr	Asp	Leu	Pro	Glu	His	Pro	Ile	Ile	Leu	Thr	Thr	His	Glu
			565					570						575	
Lys	Tyr	Leu	Ser	Leu	Val	Ile	Glu	His	Leu	Leu	Asn	Asn	Ala	Asn	Lys
			580					585					590		
Phe	Thr	Glu	Lys	Gly	Ile	Ile	Thr	Leu	His	Cys	His	Ile	Asp	Glu	Ala
	595						600					605			
Arg	Gln	Gln	Val	His	Ile	Ser	Val	Thr	Asp	Thr	Gly	Cys	Gly	Ile	Pro
	610					615					620				
Ala	Asp	Lys	His	Lys	Glu	Val	Phe	Glu	Arg	Phe	Ser	Lys	Leu	Asn	Ala
625					630					635					640
Phe	Thr	Pro	Gly	Asn	Gly	Leu	Gly	Leu	Tyr	Leu	Cys	Gln	Leu	Ile	Ile
			645					650						655	
Arg	Arg	Leu	Ser	Gly	Lys	Ile	Ser	Ile	Asp	Pro	Thr	Tyr	Thr	Gly	Gly
		660					665						670		
Thr	Arg	Ile	Thr	Val	Ile	Leu	Pro	Val	Gln						
		675					680								

&lt;210&gt; 8937

&lt;211&gt; 310

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8937

Leu	Met	Pro	His	Arg	Met	Phe	Thr	Cys	Lys	Ile	Glu	Ala	Gly	Phe	Arg
1			5						10					15	
Val	Phe	Ile	Phe	Ile	Ile	Leu	His	Phe	Val	Leu	Thr	Asn	Cys	Ile	Arg
			20					25					30		

Glu Asp Met Ser Gly Cys Pro Arg Asp Asp Gly Gly Leu Ala Leu Lys  
 35 40 45  
 Phe Ser Tyr Asp Thr Asn Ala Asp Ser Arg Leu Ser Thr Ala Gln Gly  
 50 55 60  
 Val Asp Arg Leu Ala Val Phe Ile Phe Asp Glu Lys Gly Leu Phe Ile  
 65 70 75 80  
 Ser Gln Val Asn Asp Ser Met Thr Ser Ile Asn Asp Asp Tyr Val Met  
 85 90 95  
 Glu Leu Pro Tyr Lys Gln Gly Ser Tyr Gln Phe Val Ala Trp Gly Gly  
 100 105 110  
 Tyr Asp Lys Ser Thr Tyr Gln Thr Ser Glu Cys Val Pro Arg Lys Thr  
 115 120 125  
 Tyr Ile Asp Asp Phe Phe Leu Ser Val Lys Arg Gln Glu Asp Asn Arg  
 130 135 140  
 Val Thr Asn Gln Pro Lys Leu Leu Tyr His Gly Met His Asp Ile Val  
 145 150 155 160  
 Glu Leu Asn Ser Lys Glu Lys Thr Ile Val Leu Ile Asn Leu Lys Gln  
 165 170 175  
 Met Thr Asn His Ile Arg Val Ile Ala His Asn Leu Asn Gln Asp Arg  
 180 185 190  
 Ser Asp Asn Ile Tyr Ile Glu Asp Asn Asn Gly Lys Tyr Gly Tyr Asp  
 195 200 205  
 Ser Gln Phe Ser Asp Asp Asp Arg Ile Thr Tyr Ile Pro Ile Tyr Glu  
 210 215 220  
 Ala Ser Ser Glu Gln Ser Asn Pro Leu Ile Ala Asp Phe Asn Val Met  
 225 230 235 240  
 Arg Leu Glu Lys Asp Arg Glu Pro Arg Leu Arg Ile Ala Asp Lys Thr  
 245 250 255  
 Gly Thr Ile Arg Tyr Asp Glu Asn Leu Ile Gly Lys Leu Ile Gly Gly  
 260 265 270  
 Asn Pro Asn Ile Asp Phe Glu His Asn His Asp Phe Thr Ile Glu Ile  
 275 280 285  
 Ser Phe Asp Asn Tyr Ile Pro Val Ile Ile Lys Ile Asn Gly Trp Glu  
 290 295 300  
 Ile Val Asn Glu Glu Ile  
 305 310

&lt;210&gt; 8938

&lt;211&gt; 317

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8938

Gln Leu Leu His Thr Met Ser Glu Lys Ala Pro Phe Met Val Phe Ser  
 1 5 10 15  
 Gly Thr Asn Ser Arg Tyr Leu Ala Glu Lys Ile Cys Ala Ser Leu Asn  
 20 25 30  
 Cys Pro Leu Gly Asn Met Asn Ile Thr His Phe Ala Asp Gly Glu Phe  
 35 40 45  
 Ala Val Ser Tyr Glu Glu Ser Ile Arg Gly Ala His Val Phe Leu Val  
 50 55 60  
 Gln Ser Thr Phe Pro Asn Ser Asp Asn Leu Met Glu Leu Leu Leu Met  
 65 70 75 80  
 Ile Asp Ala Ala Lys Arg Ala Ser Ala Lys Ser Val Val Ala Val Ile  
 85 90 95  
 Pro Tyr Phe Gly Trp Ala Arg Gln Asp Arg Lys Asp Lys Pro Arg Val  
 100 105 110  
 Ser Ile Gly Ala Lys Leu Val Ala Asp Leu Leu Ser Val Ala Gly Ile  
 115 120 125

Asp Arg Leu Ile Thr Met Asp Leu His Ala Asp Gln Ile Gln Gly Phe  
 130 135 140  
 Phe Asn Ile Pro Val Asp His Leu Tyr Ala Ser Ala Val Phe Leu Pro  
 145 150 155 160  
 Tyr Ile Gln Ser Leu Lys Leu Asp Glu Leu Val Ile Ala Thr Pro Asp  
 165 170 175  
 Val Gly Gly Ser Lys Arg Ala Ser Thr Phe Ser Lys Tyr Leu Gly Val  
 180 185 190  
 Pro Leu Val Leu Cys Asn Lys Ser Arg Glu Lys Ala Asn Glu Val Ala  
 195 200 205  
 Ser Met Gln Ile Ile Gly Asp Val Lys Gly Lys Asn Val Val Leu Ile  
 210 215 220  
 Asp Asp Ile Val Asp Thr Ala Gly Thr Ile Thr Lys Ala Ala Asn Ile  
 225 230 235 240  
 Met Leu Glu Ala Gly Ala Asn Ser Val Arg Ala Ile Ala Ser His Cys  
 245 250 255  
 Val Met Ser Asp Pro Ala Ser Phe Arg Val Gln Glu Ser Gly Leu Thr  
 260 265 270  
 Glu Met Val Phe Thr Asp Ser Ile Pro Tyr Ser Lys Lys Cys Ala Lys  
 275 280 285  
 Val Lys Gln Leu Ser Ile Ala Asp Met Phe Ala Glu Thr Ile Lys Arg  
 290 295 300  
 Val Met Asn Asn Glu Ser Ile Ser Ser Gln Tyr Ile Ile  
 305 310 315

&lt;210&gt; 8939

&lt;211&gt; 94

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8939

Lys Val Thr Gln Cys Thr Pro Trp Gln Leu Leu Cys Ile Ser Cys Arg  
 1 5 10 15  
 Thr Val Pro Leu Phe His Leu Ile Leu Ile Ser Glu Arg Lys Glu Ile  
 20 25 30  
 Asn Gln Thr Thr Lys Gln Gly Val Ile Gln Ile Asn Pro Leu Asn Gln  
 35 40 45  
 Cys Thr Cys Thr Met Gln Cys Pro Tyr Arg Ile Leu Phe Ser Cys Thr  
 50 55 60  
 Ala Leu Cys Met Leu Tyr Val Val Asn Asn Arg Phe Ile Leu Phe Ile  
 65 70 75 80  
 Asn Tyr Ser Ala Lys Val Ile Leu Leu Arg Ile Phe Ser Lys  
 85 90

&lt;210&gt; 8940

&lt;211&gt; 388

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8940

Ile Lys Arg Gln Ile Pro Met Lys Gln Phe Leu Ile Gly Cys Ala Leu  
 1 5 10 15  
 Leu Ala Cys Ile Ser Leu Ala Gly Cys Arg Pro Lys Asn Asn Gln Asn  
 20 25 30  
 Ala Thr Ile Val Thr Gly Glu Val Ser Asp Thr Ser Ser Val Arg Ile  
 35 40 45  
 Thr Pro Val Tyr Ala Lys Gly Phe Lys Val Thr Tyr Thr Pro Thr Cys  
 50 55 60  
 Arg Leu Val Asp Ile Ser Asp Pro Gln Lys Glu Gly Gly Glu Ser Phe

65		70		75		80
His Tyr Ala Leu Val	Pro Gly Gly Thr	Lys Pro Glu Asn Ile	Pro Ala			
	85	90	95			
Gly Tyr Thr Val Ile	Glu Thr Pro Val	Lys Ser Val Ile	Cys Met Thr			
	100	105	110			
Ser Leu Gln Leu Ser	Asn Phe Ile	Lys Leu Asp Ala	Leu Ser His Val			
	115	120	125			
Val Gly Ile Thr Ser	Thr Arg His Leu	Phe Asn Lys Glu	Met Asn Glu			
	130	135	140			
Arg Leu Lys Gln Gly	Lys Thr Ala Lys	Ile Gly Ile Glu	Gly Asn Phe			
	145	150	155			
Asp Asn Glu Val Ile	Met Ser Val Asn	Pro Asp Val Ile	Phe Ile Ser			
	165	170	175			
Pro Phe Lys Arg Gly	Gly Tyr Asp Ala	Met Arg Glu Val	Gly Ile Pro			
	180	185	190			
Leu Val Pro His Leu	Gly Tyr Lys Glu	Met Thr Pro Leu	Gly Gln Ala			
	195	200	205			
Glu Trp Ile Lys Phe	Ile Gly Leu Phe	Ile Gly Glu Glu	Glu Thr Ala			
	210	215	220			
Asn Arg Lys Phe Ala	Ala Ile Glu Lys	His Tyr Asn Glu	Leu Lys Glu			
	225	230	235			
Arg Val Ala His Val	Lys Lys Arg Pro	Val Val Phe Ser	Gly Glu Ile			
	245	250	255			
Arg Gly Gly Asn Trp	Tyr Ala Val Gly	Lys Ser Phe Leu	Ala Gln			
	260	265	270			
Leu Phe Arg Asp Ala	Gly Ala Asp Tyr	Phe Leu Lys Asp	Asp Pro Arg			
	275	280	285			
Ser Gly Gly Val Thr	Leu Asp Phe Glu	Thr Val Tyr Ser	Gln Ala Glu			
	290	295	300			
Ser Ala Asp Tyr Trp	Arg Ile Val Asn	Ser Phe Asp Gly	Thr Phe Ser			
	305	310	315			
Tyr Asp Val Leu Lys	Ser Glu Asp Pro	Arg Tyr Ala Asp	Phe Arg Ala			
	325	330	335			
Phe Arg Glu Lys Gly	Val Ile Tyr Cys	Asn Met Arg Glu	Lys Pro Phe			
	340	345	350			
Tyr Glu Ser Met Pro	Thr Gln Pro Glu	Val Leu Leu Glu	Asp Leu Ile			
	355	360	365			
Lys Ala Phe His Pro	Asp Leu Pro Asp	Tyr Thr Pro Val	Tyr Tyr			
	370	375	380			
Glu Arg Leu Asn						
385						

&lt;210&gt; 8941

&lt;211&gt; 789

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8941

Leu Ser Leu Gln Leu	Arg Ile Lys Leu	Arg Asn Lys Met	Ile Lys Lys
1	5	10	15
Ile Val Lys Gly Leu	Trp Val Phe Phe	Ala Leu Met Val	Leu Ala Gly
	20	25	30
Ile Ala Val Phe Ala	Ser Ile Ala Tyr	Gly Trp Ile Gly	Tyr Met Pro
	35	40	45
Pro Val Glu Glu Leu	Glu Asn Pro Asn	Tyr Lys Phe Ala	Thr Glu Ile
	50	55	60
Leu Ser Glu Asp Gly	Lys Val Leu Gly	Thr Trp Ser Leu	Ser Lys Glu
	65	70	75
Asn Arg Val Tyr Thr	Ser Tyr Asn Glu	Leu Ser Pro Asn	Ile Val Asn
	370	375	380

[illegible]

Variable	Unit	Mean	SD	Min	Max	Skewness	Kurtosis
Age	Years	38.5	12.5	18	65	-0.1	3.2
Gender	Male/Female	1.2	0.4	0	2	0.5	1.8
Education	Years	12.8	2.1	8	16	-0.2	3.5
Income	\$/month	1500	500	500	3000	0.3	2.9
Health	Good/Bad	1.1	0.3	0	2	0.4	1.9
Marital	Married/Single	1.3	0.4	0	2	0.6	2.1
Occupation	Various	1.5	0.5	0	3	0.7	2.3
Religion	Various	1.2	0.4	0	3	0.5	2.0
Smoking	Yes/No	0.8	0.4	0	1	0.3	1.7
Drinking	Yes/No	0.7	0.4	0	1	0.2	1.6
Exercise	Yes/No	0.9	0.3	0	1	0.4	1.8
Stress	High/Low	1.1	0.3	0	2	0.5	1.9
Sleep	Hours	7.5	1.5	5	10	-0.1	3.1
Appetite	Good/Bad	1.2	0.4	0	2	0.6	2.2
Mood	Happy/Sad	1.3	0.4	0	2	0.7	2.4
Energy	High/Low	1.1	0.3	0	2	0.5	2.0
Concentration	Good/Bad	1.2	0.4	0	2	0.6	2.1
Memory	Good/Bad	1.3	0.4	0	2	0.7	2.3
Emotion	Stable/Unstable	1.1	0.3	0	2	0.5	1.9
Personality	Various	1.2	0.4	0	3	0.6	2.2
Values	Various	1.3	0.4	0	3	0.7	2.4
Beliefs	Various	1.2	0.4	0	3	0.6	2.1
Attitudes	Various	1.1	0.3	0	2	0.5	1.8
Interests	Various	1.2	0.4	0	3	0.6	2.2
Hobbies	Various	1.3	0.4	0	3	0.7	2.4
Skills	Various	1.2	0.4	0	3	0.6	2.1
Abilities	Various	1.1	0.3	0	2	0.5	1.8
Temperament	Various	1.2	0.4	0	3	0.6	2.2
Character	Various	1.3	0.4	0	3	0.7	2.4
Qualities	Various	1.2	0.4	0	3	0.6	2.1
Attributes	Various	1.1	0.3	0	2	0.5	1.8
Features	Various	1.2	0.4	0	3	0.6	2.2
Properties	Various	1.3	0.4	0	3	0.7	2.4
Characteristics	Various	1.2	0.4	0	3	0.6	2.1
Qualities	Various	1.1	0.3	0	2	0.5	1.8
Attributes	Various	1.2	0.4	0	3	0.6	2.2
Features	Various	1.3	0.4	0	3	0.7	2.4
Properties	Various	1.2	0.4	0	3	0.6	2.1
Characteristics	Various	1.1	0.3	0	2	0.5	1.8
Qualities	Various	1.2	0.4	0	3	0.6	2.2
Attributes	Various	1.3	0.4	0	3	0.7	2.4
Features	Various	1.2	0.4	0	3	0.6	2.1
Properties	Various	1.1	0.3	0	2	0.5	1.8
Characteristics	Various	1.2	0.4	0	3	0.6	2.2
Qualities	Various	1.3	0.4	0	3	0.7	2.4
Attributes	Various	1.2	0.4	0	3	0.6	2.1
Features	Various	1.1	0.3	0	2	0.5	1.8
Properties	Various	1.2	0.4	0	3	0.6	2.2
Characteristics	Various	1.3	0.4	0	3	0.7	2.4
Qualities	Various	1.2	0.4	0	3	0.6	2.1
Attributes	Various	1.1	0.3	0	2	0.5	1.8
Features	Various	1.2	0.4	0	3	0.6	2.2
Properties	Various	1.3	0.4	0	3	0.7	2.4
Characteristics	Various	1.2	0.4	0	3	0.6	2.1
Qualities	Various	1.1	0.3	0	2	0.5	1.8
Attributes	Various	1.2	0.4	0			



50		55		60
Arg Lys Gln Phe Glu Glu Asp Val Lys Glu Ala Arg Glu Gly Leu Lys				
65		70		75
Pro Glu Gly Tyr Asp Thr Gln Leu Gln Glu Ile Asp Glu Leu Glu Asn				80
	85		90	95
Lys Ala Arg Gly Asp Lys Asp Ile Arg Asn Leu Thr Pro Glu Met Leu				
	100		105	110
Lys Ser Ala Leu Thr Glu Glu Glu Tyr Asp Lys His Glu Thr Phe Met				
	115		120	125
Pro Ile Phe Asn Lys Tyr Met Glu Glu Val Thr Asn Phe Lys Ser Glu				
	130		135	140
Lys Leu Asp Glu Glu Val Glu Met Glu Glu Lys Lys Phe Thr Gln Lys				
145		150		155
Glu Phe Asp Glu Ile Leu Asn Val Asn Thr Ala Glu Ser Tyr Asn Leu				
	165		170	175
Asp Leu Cys Met Pro Tyr Asn Gly Lys Asn Met Ile Phe Pro Gly Thr				
	180		185	190
Met Lys Ser Ala Asp Phe Met Glu Val Leu Tyr Glu Glu Phe Ile Asp				
	195		200	205

&lt;210&gt; 8944

&lt;211&gt; 198

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8944

Phe Gly Asp Lys His Val Glu Phe Ala Thr Cys Leu Trp Asn Asn Ser		
1	5	10
Thr Asn Lys Ile Leu Leu Leu Leu Leu Leu Ile Lys Leu Glu Ile Lys		
	20	25
Lys Asn Leu Ile Met Lys Lys Leu Lys Phe Asn Leu Leu Thr Gly Leu		
	35	40
Leu Leu Leu Ile Ser Val Ser Val Phe Ala Ala Gly Phe Pro Pro Pro		
	50	55
Asp Lys Val Gln Glu Thr Phe Gln Lys Met Tyr Pro Lys Val Thr Thr		
65	70	75
Val Asp Trp Gln Arg Lys Gly Asp Tyr His Ile Ala Asp Ile Arg Val		
	85	90
Asp Gly Arg Glu Leu Asn Val Trp Phe Ser Asp Lys Gly Lys Trp Leu		
	100	105
Met Thr Glu Val Asp Val Glu Thr Leu Glu Ala Val Pro Ala Ala Val		
	115	120
Ala Lys Ala Phe Met Gln Ser Thr Met Ala Ser Met Gln Leu Glu Asp		
	130	135
Val Arg Ile Ile Thr Phe Pro Lys Gln Pro Ala Val Ile Val Ile Glu		
145	150	155
Val Glu Glu Tyr Asn Thr Asp Ser Glu Phe Gln Leu Phe Tyr Ala Pro		
	165	170
Asp Gly Lys Leu Leu Gln Thr Leu Asn Val Ser Asp Thr Gly Gly Glu		
	180	185
Ile Tyr Pro Gly Leu Phe		190
	195	

&lt;210&gt; 8945

&lt;211&gt; 137

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8945

Lys Asn Lys Lys Met Ser Arg Gly Leu Arg Asn Asn Asn Pro Gly Asn  
 1 5 10 15  
 Ile Arg His Asp Arg Asp Lys Trp Gln Gly Glu Ile Val Pro Ser Gln  
 20 25 30  
 Asp Arg Lys Phe Lys Gln Phe Ile Ser Met Ala Tyr Gly Tyr Arg Ala  
 35 40 45  
 Leu Ile Lys Leu Leu Gln Asn Tyr Arg Lys Leu His Asn Arg Gln Thr  
 50 55 60  
 Ile Ala Glu Phe Ile Asn Arg Tyr Ala Pro Pro Cys Glu Asn Asn Thr  
 65 70 75 80  
 Ser Gly Tyr Ile Thr Arg Val Cys Ser Glu Met Gln Val Pro Ser Thr  
 85 90 95  
 Tyr Ile Pro Asp Ile Asp Asp Lys Ala Thr Met Cys Ala Phe Ala Ala  
 100 105 110  
 Ala Ile Gly Gln Val Glu Asn Gly Val Pro Ala Val Met Ala Asp Ile  
 115 120 125  
 Glu Ala Gly Trp Asp Leu Leu Met Lys  
 130 135

&lt;210&gt; 8946

&lt;211&gt; 259

&lt;212&gt; PRT

&lt;213&gt; B.fragilis

&lt;400&gt; 8946

Phe Arg Arg Lys Asp Arg Lys Ile Arg Leu Val Ser Arg Lys Glu Asn  
 1 5 10 15  
 Lys Val Lys Arg Ile Val Leu Leu Phe Ile Ser Ile Trp Ile Ala Phe  
 20 25 30  
 Ala Ala Tyr Gly Glu Asp Asn His Lys Lys Glu Arg His Pro Asp Asp  
 35 40 45  
 Arg Lys Ile Asn Val Gly Ile Arg Gly Gly Phe Asn Ser Ser Met Phe  
 50 55 60  
 Leu Val Ser Asp Leu Lys Ile Lys Asp Val Thr Ile Asp Glu Ile Gln  
 65 70 75 80  
 Asn Asn Tyr Lys Ile Gly Tyr Phe Gly Ala Leu Phe Met Arg Leu Asn  
 85 90 95  
 Met Lys Arg His Phe Ile Gln Pro Glu Ile Ser Tyr Asn Ile Ser Arg  
 100 105 110  
 Cys Glu Ile Ser Phe Asp Lys Leu Gly Ser Gln His Pro Asp Ile Glu  
 115 120 125  
 Pro Asp Tyr Ala Ser Val Ser Ser Thr Ile His Ser Ile Asp Phe Pro  
 130 135 140  
 Leu Leu Tyr Gly Tyr His Val Val Lys Gln Gly Pro Tyr Thr Met Ser  
 145 150 155 160  
 Leu Phe Ala Gly Pro Lys Leu Arg Tyr Leu Trp Asn Lys Lys Asn Lys  
 165 170 175  
 Ile Thr Phe Glu Asn Phe Asp Gln Gln Gly Ile His Glu Lys Leu Tyr  
 180 185 190  
 Pro Phe Asn Val Ser Ala Val Ile Gly Val Ser Val Asn Ile Ser Arg  
 195 200 205  
 Ile Phe Phe Asp Phe Arg Tyr Glu Gln Gly Leu His Asn Leu Ser Lys  
 210 215 220  
 Ser Val Thr Tyr Asp Asn Ile Asp Met Glu Gly Arg Pro Glu Val Ser  
 225 230 235 240  
 Asn Ile Thr Phe Arg Arg Arg Asp Asn Val Leu Ser Phe Ser Leu Gly  
 245 250 255  
 Val Ile Phe